Evaluative Study of Manuscript Conservation and Digital Preservation Efforts by National Mission for Manuscripts (NaMaMi) and Its Partner Centers in Maharashtra

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By

Dr. Vijay Srinath Mohan Kanchi,

M.A. (Philosophy), Ph.D., NET, SLET,
M. Lib. & I. Sc., NET, M.A. (Education)

Under the guidance of

Dr. Jagdish N Kulkarni

Librarian and Director (Addl. Charge),

Knowledge Resource Centre,

Swami Ramanand Teerth Marathwada University, Nanded

Submitted to

Swami Ramanand Teerth Marathwada University, Nanded

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CERTIFICATE

This is to certify that the thesis titled, **'Evaluative Study of Manuscript Conservation and Digital Preservation Efforts by National Mission for Manuscripts (NaMaMi) and Its Partner Centers in Maharashtra'** is an original research work carried out by **Dr. Kanchi Vijay Srinath Mohan** under my supervision and guidance and submitted for award of the Degree of Doctor of Philosophy (Ph.D.) in Library and Information Science, under the faculty of Interdisciplinary Studies as per the requirements of Swami Ramanand Teerth Marathwada University, Nanded. The thesis has not been used, in whole or part, as the basis for the award of any degree, diploma, or other similar title in this or any other university. In my view the thesis is suitable for award of the Degree of Doctor of Philosophy (Ph.D.) in Library and Information Science and I recommend for the same.

Place:-Nanded **Dr.Jagdish N Kulkarni**

Date: /06/2021 **Research Guide**

DECLARATION

I hereby declare that the entire work embodied in this thesis has been carried out by me, under the supervision and guidance of **Dr. Jagdish N Kulkarni,** Librarian and Director (Additional Charge), Knowledge Resource Center, Swami Ramanand Teerth Marathwada University, Nanded. No part of this thesis has been submitted for obtaining any degree, diploma of any University or Institute. All the reference materials used during the preparation of this thesis have been duly acknowledged with proper citation of the sources in the reference list at the end of each chapter as well as in the Bibliography list appended at the end of the thesis.

Place: Jalgaon **Dr. KanchiVijaySrinath Mohan**

Date: /06 /2021 **Research scholar**

Dedication

Dedicated To My Mother

Smt. K. Ramadevi

Who Introduced Me To This World,

Made Me Appreciate the Great

Indian Cultural Heritage

And

The Need to Conserve It for Future

Generations

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(KANCHI VIJAY SRINATH MOHAN)

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List of Abbreviations

AS: Anandashram Sanstha, Pune

BBKKRC: Barrister Balasaheb Kharadekar Knowledge Resource Center, Kolhapur

BISM: Bharat Itihas Samshodhak Mandal, Pune

BORI: Bhandarkar Oriental Research Institute, Pune

FC: Ferguson College, Pune

IGNCA: Indira Gandhi National Center for the Arts

IOS: Institute for Oriental Studies, Thane

IVKRSM: Itihaskar V K Rajwade Samshodhan Mandal, Dhule

JPEG: Joint Photographic Experts Group

KKSU: Kavi Kulguru Kalidas Sanskrit University, Ramtek

MCC: Manuscript Conservation Center

MCPC: Manuscript Conservation Partner Center

MJC: Moolji Jaitha (Autonomous) College, Jalgaon

MPC: Manuscript Partner Center

MRC: Manuscript Resource Center

MS: Manuscript (singular)

MSS: Manuscripts (plural)

NaMaMi: National Mission for Manuscripts (old abbreviation)

NMM: National Mission for Manuscripts

OCR: Optical Character Recognition

PDF: Portable Document Format

PP: Prajna Pathshala, Wai

SFGS: Shri Forbes Gujarati Sabha, Mumbai

SVM: Samarth Vagdevata Mandal, Dhule

TIFF: Tagged Image File Format

UNESCO: United Nations Educational, Scientific and Cultural Organization

UoM: University of Mumbai

VSVSM: Veda Shastra Vidya Samvardhan Mandal, Karad

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ABSTRACT

Manuscripts embody the cultural wealth of any nation. They store in them knowledge and wisdom of our ancients who devoted their life and times to transmit all that they considered necessary to hand over to the posterity. Manuscripts are our legacy. They store in them many eternal truths that are valid and applicable to the humanity at any given point in time. Not caring to conserve them, let alone take an inquisitive look at the information they contain is like showing unwillingness to open the 'will legacy' of the parents and read its contents which is meant only to benefit the heir.

Recognizing the urgency and need for preserving the manuscript legacy of this culturally rich nation, the Government of India under the aegis of the then Prime Minister Shri Atal Bihari Vajpayee constituted the National Mission for Manuscripts (NaMaMi aka NMM) under the Indira Gandhi National Center for the Arts on mission mode. Though National Archives of India, set up more than a century ago is there with the objective of archiving historical documents and government records, its mandate is not centered on the manuscript heritage and hence a need was felt to constitute an agency that exclusively focuses on conserving manuscripts that are scattered across the country. Living up to the expectations, the NMM undertook a massive pan India survey of manuscript custodians – both individuals and institutions – and documented the information in its first two five year terms. These were the most fruitful years in the eighteen years of NMM's existence.

In its mission to conserve the manuscript heritage, the NMM has partnered with several existing manuscript custodian centers across the country and even set up a few new centers and accorded them the status of Manuscript Resource Centers (MRCs), Manuscript Conservation Centers (MCCs), Manuscript Partner Centers (MPCs) and Manuscript Conservation Partner Centers (MCPCs). At present, in the State of Maharashtra, there are thirteen centers partnering with the NMM in the worthy and noble task of manuscript documentation, conservation and digital preservation. The present study is aimed at closely examining these manuscript custodian centers the constraints and challenges they face in their task of manuscript conservation.

The study is carried out with the help of a questionnaire designed with 186 questions divided into eleven parts that corresponded with the hypotheses meant to be validated. The websites, brochures and pamphlets of these centers greatly helped in gathering

primary data. Owing to the pandemic conditions that prevailed in most part of 2020, data was also collected through telephonic interviews with the in-charges of custodian centers. The analysis of the data revealed the significant role played by these centers in documenting and many of them even digitizing their manuscript heritage. However the study also brought to the fore several lacunae as well such as lack of adequate training, lack of conservation equipment, infrastructure for preservation and conservation of MSS, lack of systematic and concerted conservation efforts, inadequate financial assistance offered by the NMM that too only in spurts and bits, lack of proper supervision of the activities of the custodian centers by the apex agency, lack of awareness about MRC status by many of the custodians of the recipient centers due to non-activity and no interaction with the NMM for several years, etc. Most of the custodian centers do not have any well spelt out collection development plans, standard conservation procedures, standard operating procedures in case of disaster planning, etc. The study revealed the urgent need to revitalize the whole system by bringing in radical changes in the procedures and functioning presently adopted by the NMM.

CHAPTER – I

INTRODUCTION

1.1 What is a Manuscript?

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CHAPTER I

Introduction

India has been known world over as the repository of one of the ancient most civilizations of the world. India in the ancient past has registered some of the greatest achievements in the world of science, art, literature, architecture, philosophy and other subjects. Four of the important religions of the world, Hinduism, Buddhism, Jainism and Sikhism, owe their origination to this great land. These religions have contributed to the rich heritage of ancient wisdom which was preserved for centuries in the form of oral tradition, monuments, artifacts and also as manuscripts. India was home for world acclaimed universities such as Nalanda, Taxashila, Vikramashila, where scholars from across the globe visited to gain knowledge and scholarship. It is recorded that when Bhaktiyar Khalji set fire to the Nalanda University in 1198 AD so as to incinerate the knowledge and wisdom of the 'infidels', the library is said to have burnt for months together! Such was its manuscript wealth! Khalji is also remembered for the destruction of other famed universities of that time including Odantapuri in Bihar and Vikramashila apart from Nalanda. Even after repeated arson and looting carried out year after year to efface the ancient wisdom from the land by the marauding crowds, several lakh manuscripts still survived in the temples, mutts and also protected by the individuals.

For ages, human beings have concretized and in a way, tried to immortalize their knowledge, ideas, thoughts and feelings on myriad subjects first, through carving and later through writing. The practice of writing, preserving and worshipping the 'word' as the epitome of knowledge has been an age old tradition in India. The great temple carvings, cave paintings and manuscripts enshrined in them the history, folk lore, religion, philosophy, values and ideals of their times. Undoubtedly, manuscripts are the primary sources of information on the religious literature, folk culture, practices traditions and customs, native medicinal formulations such as Ayurvedic and Siddha, veterinary science, animal husbandry and agricultural science, crafts and skills, astrological and astronomical recordings, a good number of which have even become extinct in the last two hundred years or so. John Bennett in his much acclaimed book The Long Pilgrimage (1965) says that India has shed and distanced itself from the

cultural and historical legacy that it had so efficiently preserved for well over ten thousand years in just two centuries starting from the late eighteenth century that no tyrannical invader could succeed to divest it with. This legacy is now only available in the form of manuscripts. A quick glance at the catalogues of various manuscript resource centers reveals that there are manuscripts on selecting, breeding and rearing of horses, on kings, their lineage and rule, public administration, war craft, on sensual aspects of life and much more, knowledge about which is no longer extant in the living memory of the present generation. The enormous range of languages and scripts in which manuscripts are found reflects vibrant linguistic and literary traditions over thousands of years.

Manuscripts are the existing example of the humanistic and imaginative activities of the earlier period of human civilization. 'A manuscript speaks of the past, reveals history, unfolds perspectives and reflects the socio-cultural, even socio-political scenes of its time. Its contents are significant literarily, scientifically, historically; its form fascinating paleographically, calligraphically and technically' (Basu & Das, 2009, p. vii). The literary, scientific, social or political history of a people can only be written objectively if it is based on the original sources, and those sources are manuscripts or archival documents. Manuscripts are the lifeblood of history. Indeed when the term 'source' is used in historical research, it points to the original document.

Culture is multi-dimensional, multi-form representation of a civilization. Cultural heritage anchors people to a particular time and place, creates a frame of reference for their actions and provides a value base for their lives. No civilization that severs its ties from its cultural heritage can boast of a meaningful existence. Archives, libraries and museums act as memory institutions both to our inheritance from the past and our legacy to the future. The Indian tradition has always seen *vidya* as the only real *dhana* and it is a matter of happiness that the world has of late, come to recognize knowledge as the key resource for change.

Grace Morley, the first Director of the National Museum, New Delhi writes: 'Manuscripts in India have a long tradition. They were produced in all parts of the country: they are in many languages and scripts and on wide range of religious, philosophical, historical, literary and scientific subjects. Frequently, they have rich illuminations and illustrations of outstanding quality, in a great variety of schools and

styles of miniature painting. In some periods and places in India their importance to the history of the development of painting is great. Everywhere they are a reflection of profound and wide ranging learning, and of the richness, variety and long history of Indian culture'(Morley, 1962).

Manuscripts are precious part of our cultural heritage. They are considered as one of the main knowledge resources of human kind (Nandi & Palit, 2010). While Vedic oral tradition of India is reckoned as an astounding feat that preserved the vast ancient wisdom intact for at least well over five thousand years, the dedicated efforts of some of the great ancient scholars in the medieval India created a vast swathe of written records of knowledge. For several centuries a vvariety of writings covering almost every conceivable field including philosophy, religion, language and grammar, literature, metaphysics, art and dance have been produced in all the Indian languages. Undoubtedly, this profound and timeless heritage of our nation is its most valued and revered gift to the humanity.

In India the word 'Grantha' (Books/manuscripts) is mentioned as back as 5^{th} century BC (Jain et al., 2013). The earliest known palm leaf Indian manuscript belonged to the sixth century A.D in Sanskrit language (Banerjee, 2010). Even Hiuen Tsang, the famed Chinese pilgrim, who documented his visits to several parts of India, mentioned in his travelogue the use of palm leaf as the medium for manuscript writing all over India in seventh century A.D. Later, during the reign of Islamic rulers, paper was introduced as the medium for writing manuscripts. The oldest known paper manuscript in India is one from Gujarat which belongs to the early part of the thirteenth century (Banerjee, 2010). Hiuen Tsang took to China hundreds of manuscripts from India. Later in the late eighteenth century, the Nawab of Awadh gifted a superb illuminated manuscript of the Badshahnama to King George III of England (Jain et al., 2013).

Jawaharlal Nehru in his The Discovery of India (1965, p. 96) wrote that "one of our major misfortunes is that we have lost so much of world's ancient literature in Greece, in India and elsewhere…probably an organized search for old manuscripts in the literary of religious institutions, monasteries and private persons would yield rich results. That and the critical examination of these manuscripts and, where considered desirable, their publication, and translation, are among the many things we have to do

in India when we succeed in breaking through our shackles and can function for ourselves."

In fact, there is no dearth of manuscripts in India even today. A survey conducted by the popular Newspaper Eenadu in 2001 in the erstwhile Andhra Pradesh, Maharashtra and Karnataka had revealed that several houses in each village still hold large collections of manuscripts which are transmitted from generation to generation and are kept in homes as household legacy. However, it is pathetic to note that a lot of such manuscripts still lay unattended bundled and kept on attics and almirahs. There is an urgent need to locate and preserve this rich heritage from being lost forever.

According to the survey conducted by Prof. S.C. Biswas and M.K. Prajapati (1998), there are an estimated five million manuscripts of Indian origin preserved in public and private collection in India. In addition to these, about 60,000 Manuscripts are preserved in Europe and North America in various libraries, museums and Indology departments of various universities.

1.1 What is a Manuscript?

Manuscripts are precious part of our cultural heritage. Great ancient scholars dedicated their lives for creating written records of knowledge. The term 'Manuscript' is derived from '*manuscriptum'* which is a combination of two Latin words -'Manus' and 'Screbere' or 'Screpte'. 'Manus' means hand and 'Screbere' or 'Screpte' means to scratch. Thus 'Manuscript' in Latin means hand-written. It corresponds to the Sanskrit word 'Hastalikhita' which is also derived from two component words 'Hasta' and 'Likhita' meaning the same.

The Oxford English Dictionary ("Manuscript," 1908, p. 686) defines the term manuscript as follows:

a. Written by hand and not printed.

b. 1) A book, document or the like written by hand, writing hand, writing of any kind as distinguished from printed matter.

   2) Written character or written document in general, writing as opposed to print.

Harrod's Librarians Glossary (Harrod, 2005, p. 445) defines manuscripts as, 'A document of any kind which is written by hand, or the text of a music or literary

composition in hand-written or typescript form, and which, in that form, has not been reproduced in multiple copies'. Broadly, 'manuscript' refers to any handwritten document from ancient times until the introduction of printing in the 1400s. However, handwritten documents having significant historical or cultural value, produced even after the advent of printing technology but at least 75 year old are also called manuscripts. One of the chief characteristics of manuscripts is that they have knowledge value. According to the Antiques and Art Treasure Act of India, 1972 'a manuscript is a handwritten composition, which has significant scientific, historical or aesthetic value and which has been in existence for not less than seventy-five years old'(Gaur & Chakraborty, 2009).

In simple terms, a manuscript is any document that is written by hand, as opposed to being printed or reproduced in some other way. The term may also be used for information that is hand-recorded in other ways than writing, for example inscriptions that are chiselled upon a hard material or scratched (graffiti) as with a knife point in plaster or with a stylus on a waxed tablet (the way Romans made notes), or are in cuneiform writing, impressed with a pointed stylus in a flat tablet of unbaked clay (Roy, 2010, p. 239).

In India manuscripts are variously described as pandulipi, hastalekha, matrka, pustaka, pustika, pusta, potha, pothi, pothaka, mulakosa, adarsa, and so on (Nandi & Palit, 2010, p. xix). In Bengali and in some other Indian languages, the handwritten documents are called *pandulipi.* Roy (2010, p. 240) explains the probable reason for this nomenclature: 'the material on which they (manuscripts texts) were inscribed was either grey or pale yellow in colour. This is one of the reasons behind the name *pandulipi*, since *pandu* stands for yellow in Bangla and *lipi* for writing'.

The pages of manuscripts are called folio. The faced position is called Recto and the backside of the folio is called Verso. The abbreviation MS is used to denote a singular manuscript and MSS is used in plural sense. However it may be noted that the second 'S' is not simply to denote plural noun; it is an old convention which doubles the last letter of an abbreviation to express the plural just as 'pp.' means pages.

In the publication industry, the term manuscript is used for any document written by hand or by a machine such as a typewriter or produced by a desktop printer and which is submitted for scrutiny and possible publication. The word is often used to

distinguish an author's original version of a work from the printed copy. However, in the context of the present research, the term manuscript is taken to mean 'a handwritten composition on paper, bark, cloth, metal, palm leaf or any other material dating back at least seventy five years, that has significant scientific, historical or aesthetic value'.

1.1.1 Internal Characteristics of Manuscripts

Manuscripts often display important features such as Preamble or Bhonita, Colophon or Pushpika. Preamble or Bhonita describes the name of the manuscripts and sometimes, the writer. It is a variant of Pushpika. Colophon or Pushpika is a composite work made of a brief autobiography of the writer, the name of the manuscript the date of writing/copying and the name of the writer/copyist. The name of the scribe is generally found on the first leaf, at the end of the chapter or act, and on the last folio of the manuscripts. Pushpika also contains the name of the scribe and the former content of the manuscripts in last folio, along with the dates of writing or copying in last folio (Nandi & Palit, 2010, p. xx). It also may contain the name of the person who delegated this task to the writer (Roy, 2010).

Interestingly some colophons contain supplications to the custodians of the manuscripts that succinctly describe the enemies of manuscripts in the following lines:

तैलाद् रक्षेत् जलाद् रक्षेत् रक्षेत् शिथिल बंधनात।

मूर्ख हस्ते न दातव्यं एवं वदति पुस्तकम्॥

That means; "The book itself appeals to the owners to protect it from water, oil, shack binding, and from the hands of fools who do not know proper handling". Some of the authors also request the user to treat the manuscripts as their own sons ("Putravat Paripalayet").

1.1.2 Constituents of Manuscripts

a. Media: The term 'media' in the context of manuscripts describes the material on which the content of the manuscript is written. Media that were extant in India and across the world include clay tablets, stones, metals, ivory, tortoise shells, tree barks and leaves, animal skins, cloths, papers, etc.

The principal materials employed in the making of manuscripts have been papyrus (*charta aegyptica*) from the tree Cyprus Papyrus in Egypt and Abyssinia. Papyrus

manuscript was mainly used for writing in ancient times as early as 3000 B.C. in Egypt, Greece, Rome and other areas surrounding the Mediterranean Sea (Roy, 2010). In the ancient times, the manuscript sheets were pasted together into rolls or volumes, which were usually twenty to thirty feet long. The University of Michigan has nearly 7,000 papyrus manuscripts, which is largest in the U.S.A (Panage, 2003). However the main problem for papyrus manuscript is that it decays in damp climate as it is made of plant material (Bagchi, 2010). The monks of the middle ages copied onto parchment many ancient classics from decaying papyrus rolls. The use of skins as writing material is probably as old as the invention of writing. Parchment was first used as manuscript material because it was cheaper than papyrus. It was also easier to write on with a pen and it lasted longer than papyrus. Paper was an invention of Chinese, even though the word paper comes from the Egyptian papyrus. Paper is said to have been invented in China in 105 A.D. by Tsai Louen (Chavannes, 1905). The ancient Chinese wrote their earliest manuscripts on narrow wood or bamboo strips, or on silk rolls. After they learned to make paper, they sought methods of making it easier to handle (Panage, 2003, p. 42).

There are evidences in the history to show that the art of preparing paper was known to Indians. Max Muller in his 'History of Ancient Sanskrit Literature' points to the documented evidence by Niarchos, one of the chieftains of Sikander who wrote: 'The people in India know the art of preparing paper by using the cotton and rags of clothes, on which. Forecast, Almanacs and 'Janmakundali' were written down'(Muller, 1859, p. 607). Though the art of making paper was known to them, it is believed that the use of paper was not in vogue during that time (326 B.C.). It may be because of long lasting need of message to be retained and so, the stone was the popular medium used for government orders (Farman), list of donors etc. to be engraved on the stone.

Anita Bagchi (2010, p. 183) quotes Subbarayappa's article in *A Concise History of Science in India* (Subbarayappa, 1989, p. 341) to point out that 'the art of paper making was introduced into India by about 11th Century A.D. probably from Nepal which in turn might have imported the technique of paper production from China'. Referring to the same source, she also points out that 'before the introduction of paper in India, the vast mass of ancient literature on all sorts of subjects had to be preserved either on palm leaves (*tala patra)* or birch bark (*bhurja patra).* The practice of using

tala patra was popular in South India and that of the bhurja patra was in Kashmir and northern region of the country' (2010, p. 183).

The most commonly used tree barks are those of Cyperus papyrus and Sanchi bark (agaru tree). The most commonly used leaves are pal leaves, bhurja patra, terata leaves, etc. Animal skins used include those of deer, sheep, goats, cows, asses buffalos, etc (Nandi & Palit, 2010). However, it may be remembered that owing to religious sentiments and cultural practices, animal skins are never used by the Hindus, Jains and Buddhists. It is only the manuscripts of Abrahamic religions such as Islam, Christianity and Judaism that are found on animal skins. Parchment (*charta pergamena*) made of the skin of sheep, goats and calves (*vellum*), asses, etc was used by Ionians and Asiatics. Silk and cotton clothes are also used as the base for writing. Tulat paper and handmade paper were extensively used in later times.

b. Ink: *incaustum* is the Latin term for ink. It is a fluid used for writing in the ancient past, of which, there were two kinds, the black (*incaustum nigrum* also called *atravientum* (from ater, black) and the red (*incaustum rubrum*) (Encyclopedic, n.d.). While writing or copying manuscripts in the Middle Ages, the writers/copyists have chiefly used black ink, composed of a mixture of gall nuts and vitriol. Red ink has been reserved from ancient times for titles. To give a deluxe look to the manuscripts, gold and silver inks have been used. The ink has been made instantly at the time of writing of the manuscript from the available ingredients. The best quality ink has been prepared from the items: sesame, three kinds of myrobalan, bark of the silk cotton plant compounded with goat milk. All the items were ground with lac in an iron pot. For writing purposes feathers of the peacock or the vulture or branches of the bamboo tree are used as pen. Metal nibs are also used for writing manuscripts (Nandi & Palit, 2010, p. xx). It is because of the presence of iron content in these ancient inks that the writings on several old manuscripts bear 'rustic' look. However, as the ink becomes rusted, it eats into the media on which it is written and so the scripted part of the manuscript becomes 'cut through'.

c. Binding: The binding or outer covers of these manuscripts are generally made of wood of birch trees, sal and other teaks. Sometimes parchment or dyed skin

is also used. Deluxe covers of the manuscripts were made of ivory or brass, ornamented with carvings, cut and uncut precious stones, etc.

Manuscripts are found in various sizes, the smallest one having a dimension of 6 inches X 3 inches and the biggest one measuring three and half feet in length and one and half feet in breadth (Roy, 2010, p. 239).

Manuscripts are generally wrapped up in a piece of cloth, preferably red in colour, or enclosed in wooden box. The boxes are painted in different colours with pictures suited to the text of the manuscript (Nandi & Palit, 2010, p. xxi).

Manuscript culture refers to the development and use of the manuscript as a means of storing and disseminating information until the age of printing which came into general use during the 1400s. Paul Mosher (1988, p. 172) mentions that handwritten manuscripts were the chief records of human history for about 5000 years, until the time when printing became general throughout the 'western World'. The manuscript culture is broadly divided into early and late ages. The Early Age of manuscript culture consisted of monks copying mostly religious texts in monasteries. Medieval manuscript culture deals with the transition of the manuscript from the monasteries to the market in the cities, and the rise of universities. Manuscript culture in the cities created new jobs built around the making, copying and trade of manuscripts, and typically was regulated by the universities. The Late Age of manuscript culture existed immediately before and during the rise of the printing press. Late manuscript culture was characterized by a desire for uniformity, well ordered and convenient access to the text contained in the manuscript, and ease of reading the text aloud. The material used to be specially processed leather, leaves or barks from trees; during the latter times i.e., the medieval period, paper made from cotton-pulps, hemp, and linseed showed up. This facilitated the making of large sheets, which were then cut to the required size and tied together with strings to give it the appearance of a book, with two firm boards sufficing for covers (Roy, 2010, p. 239).

Just as the stone-monuments or other antiquities, the literary treasure enshrined in manuscripts help to understand the history and the cultural heritage of a country. In India, for well over 4,000 years, Sanskrit with its derived (Indo- Aryan) languages and the languages of the Dravidian family have produced an enormous variety of literature in a variety of scripts. The material used for writing in India was quite varied, being

mainly palm leaf (tala-patra), birch bark (bhurja-patra), stone, metal (like tamrapatra) and lastly from 10th century A.D. onwards, paper.

India manuscripts cover a variety of subjects like religion, philosophy, history, literature and many scientific subjects. In the introduction to the book edited by them, Nandi and Palit (2010) mention that 'as per the present available source we may estimate that there are 50 lakh manuscripts scattered around the country of which 67% are in Sanskrit and 25% in other Indian languages of which Arabic, Bengali, Hindi, Kannada, Malayalam, Oriya, Pali, Persian, Tamil, Telugu, Urdu etc., are major languages and rest 8% are of non-Indian languages. It is roughly estimated that over 3.5 million manuscripts may be preserved and 30% of the remaining total MSS that are stored in Temples, Mutts and in private hands (Singh et al., 2010). The main subjects of Indian manuscripts include Jainism, Hinduism, Buddhism, Vedas, Upanishads, Ramayana, Mahabharata, ancient Indian science, Ayurveda, Indian philosophy and literature etc. They are written in different scripts such as Brahmi, Sharada, Modi, Newari, Grantha, Kutila, Devanagari, Tamil, Telugu, Arabic, Persian, Oriya, Malayalam, Bengali, etc. Some manuscripts are illustrated containing mathematic calculations, Maps and explanatory figures. They are found in various forms such as scrolls, codex and in book forms. Illuminated manuscripts are enriched with pictures, border decorations, elaborately engrossed Initial letters, full page illustrations and decorative binding. 'An illuminated manuscript is one which has been decorated by hand, usually on vellum, with designs and pictures in gold, silver and bright colors, not primarily to illustrate the text, but to make with it a unified whole' (Harrod, 2005, p. 445).

1.1.3 History of Manuscript Preservation

Till recent past, kings, priest, scholars, and zamindars were the chief patrons of manuscripts who kept manuscripts under their custody in palaces, temples, monasteries, museums, archives, libraries and other similar repository institutes.

However, for the last couple of centuries efforts have been made to collect and preserve Indian manuscripts in libraries both in India and abroad. In as early as late seventeenth century, Europeans began to take interest in Sanskrit literature and Indian religions. A. A. MacDonnell, Professor of Oxford, wrote in his History of Sanskrit Literature 'Since the Renaissance, there has been no event of such worldwide significance in the history of culture as the discovery of Sanskrit literature in the later

part of the 18th century'(Chatterjee, 2010). During that time Robert Chambers, Colin Mackenzie, and several other English and other European scholars began to take a deep interest in Indian culture. There were some great scholars including William Jones, C. P. Brown, John Leyden, Colin Mackenzie, Charles Wilkins, H. H. Wilson and H. T. Colebrook etc., who took an avid interest in many facets of the culture of the sub-continent (Jain et al., 2013). They tried to get acquainted with the Sanskrit language and literature, and started collecting inscriptions, epigraphs, and manuscripts privately. Krishnakumar describes: 'The Europeans took away the manuscripts and other curious collected by them to their homelands. The European scholars and academicians showed keen interest in the literatures of Sanskrit including the technical works. This resulted in frequent demands on Indian Government for ancient manuscripts of this country from different parts of the western world. Due to such tremendous pressure from various corners, the Government encouraged the collection and preservation of ancient Indian records and literary works' (Krishnakumar, 2010, p. 295).

However, it was the colonial British rulers, who formally created the subject Indology at the end of the 18th Century, when the English philologist William Jones founded the Asiatic Society of Bengal in Kolkata in 1784. In the third anniversary discourse of the Asiatic Society, Jones said 'The Sanskrit (sic) language, whatever be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either…' (Jones, 1786). One of the main aims of the Asiatic Society of India was to collect and preserve valuable manuscripts, a huge number of which were laying in the houses of scholars, in schools and pathshalas, in religious mutts, monasteries, temples, palaces and village libraries in Bengal and different parts of India. Later on, in the latter half of the 19th century, the then Government of India took an active part and allocated funds for the collection of manuscripts. Whitley Stokes, Secretary to the Council of Governor General in 1868 said `no time should be lost in taking measures to save the manuscripts which are degenerating because of the climate, white ants and declining interest'("National Mission for Manuscripts," 2002). In those times, scholars such as G. Buhler, A.C. Brunel, R.G. Bhandarkar, R.L. Mitra, F. Kielhorn, G. Oppert, G.B. Malleson, Hara Prasada Shastri and few others were deputed to tour in different provinces of India in search of manuscripts, to make a list of the available ones and to purchase the more

important of them. Since then the mission of the collection, preservation and cataloguing of manuscripts and preparation of critical editions of important texts conserved in them, is going on, in and outside India by scholars worldwide with an interest to protect and study this rich cultural heritage. With the exception of a few royal or scholarly manuscript collections, most of the manuscripts in the major manuscripts depositories today are derived from individual collections of priestly or other Brahmin householders (Rani, 2010). The efforts in this direction in the early part of the 20th century by people like T. Ganapati Shastri, Sambasiva Shastry, R.A. Shastri and U.V. Swaminatha Iyer are also to be remembered (Krishnakumar, 2010, p. 295). R. Ananta Krishna Shastri of Trivandrum helped in collecting manuscripts in Visva-Bharati center in West Bengal in the early 1920s (Banerjee, 2010).

India has more manuscript collection than any other country in the world and there is no other world civilization which has such a proliferation of hand written literature as the Indian. The religious writings of Hinduism, Buddhism and Jainism, philosophical writings, rich collection of literature form the bulk of the texts. These manuscripts are widely distributed in the form of copies and copies of copies.

The IGNCA Newsletter published before the National Mission for Manuscripts (NMM) was officially set up in 2003 quotes the Mission Document finalized by the Department of Culture, which maintains that there is no accurate account of the number of manuscripts available in the country ("National Mission for Manuscripts," 2002).

In India, only a small percentage of manuscripts available have been surveyed and catalogued. Catalogues are perhaps available for not more than 20-25% of the manuscript collections in the country (Rani, 2010). The Discussion Paper prepared to finalize the modalities of NMM pointed out that only a small percentage of the manuscripts has been surveyed and catalogued and 'their number may not be more than 20-25 per cent of the estimated total' ("National Mission for Manuscripts," 2002). It also notes that 'A substantial number of Indian manuscripts have been taken outside the country. It will be part of the Mission's efforts to get copies of these manuscripts, for which budgetary provision has been made ("National Mission for Manuscripts," 2002).

According to a conservative estimate there are over five million manuscripts in India in various forms and scripts, 60,000 in European countries and 1.5 million in South Asia and Asian countries. Sanskrit manuscripts form 67 per cent of the total number ("National Mission for Manuscripts," 2002). In her preface to the publication of NMM titled Indigenous Methods and Manuscript Preservation (Sah, 2006, p. vii), Sudha Gopalakrishnan, Founder Director, NMM claims that 'India's manuscript collection is estimated at almost five million'. IGNCA has covered around 2,50,000 manuscripts. The Indian National Trust for Art and Cultural Heritage (INTACH) has successfully surveyed 27 districts of Orissa till June 2005 and documented 1,75,834 palm leaf manuscripts and 13,531 paper manuscripts in various places of Orissa (*Documentation | INTACH Art and Material Heritage*, n.d.).

The Newsletter provides a list of institutions and centers having appreciable manuscript collections:

S.No.	Organization	No. of Mss
1.	Sampurnanand Sanskrit University, Varanasi	1,20,000
2.	Government Oriental Manuscript Library, Chennai	66,077
3.	Oriental Institute and Manuscript Library, Tiruvananthapuram	56,000
4.	Saraswati Mahal Library, Thanjavur	47,000
5.	Adayar Library and Research Center, Chennai	40,000
6.	Orissa State Museum, Bhubaneswar	25,000
7.	Andhra Pradesh Oriental Manuscript Library & Research Institute, Hyderabad	21,136
8.	State-Central Library, Hyderabad	17,000
9.	Rajasthan State Archives, Jaipur	14,000
10.	Rajasthan Oriental Research Institute, Jodhpur	12,262
11.	Government Manuscript Library, Allahabad	11,000

Table 1.1 List of Universities and Institutions having Manuscript Collection as per IGNCA Website

Source:("National Mission for Manuscripts," 2002)

Kumar and Shah (Kumar & Shah, 2004, p. 28) quote a more detailed list of Universities and research institutes having manuscript collections, which was provided by Hassel in his book titled 'A History of Libraries':

Sl.	Name Of The Institution	No of MSS
1.	Sampurnanand Sanskrit University, Varanasi	1, 40,000
2.	Rajasthan Oriental Research Institute, Jodhpur	1, 16,123
3.	Govt. Oriental Manuscript Library Chennai	72,620
4.	TSSM Library, Thanjavur	47,625

5.	Adayar Library and Research Center, Chennai	40,000
6.	Orissa State Museum, Bhubaneswar	37,000
7.	Asiatic Society, Kolkata	32,000
8.	Andhra Pradesh Oriental Main Library	23, 115
9.	Khuda Baksh Oriental Public Library, Patna	20,060
10.	Scindia Oriental Research Institute, Ujjain	18,695
11.	Punjab University, Chandigarh	18,395
12.	State Central Library, Hyderabad	17,000
13.	Vishwabharati University, Shantiniketan	15,354
14.	Rampur Raza Library, Rampur	15,000
15.	Rajasthan State Archives, Bikaner	14,000
16.	Kameshwar Singh Darbhanga Sanskrit University, Darbhanga	13,000
17.	University of Calcutta, Kolkata	13,000
18.	Aligarh Muslim University, Aligarh	12,000
19.	Govt. Manuscript Library, Allahabad	11,000
20.	Banaras Hindu University, Varanasi	10,500
21.	Safdarjang Museum, Hyderabad	10,000
22.	Central Institute of Buddhist Studies, Leh	10,000
23.	Osmania University Library, Hyderabad	6,428
24.	Shivaji University Library, Kolhapur	5,673
25.	Kurukshetra University, Kurukshetra	5,500
26.	Poona University, Poona	4,416
27.	Patna University, Patna	3,700
28.	Tamil University, Thanjavur	3,365
29.	National Library, Kolkata	3,258
30.	Guwahati University, Guwahati	3,248
31.	Utkal University, Utkal	3,053
32.	Andhra University Library, Hyderabad	3,000
33.	Sanskrit Academy, Osmania University, Hyderabad	3,000

Table 1.2: List of Universities and Institutions having Substantive Manuscript Collections

Source: (Kumar & Shah, 2004, p. 28)

The disparity in the numbers in the above two tables is a reflection of the fact that the numbers cited by various sources in respect of the MSS collection of various MSS centers is seldom accurate. There is often a wide disparity in the number of their MSS collection, stated by various centers themselves at various places. This is a sorry reminder of the fact that many MSS custodians themselves have no exact figures of their collections. Rani Syamalamba describes some of the important Indian Public Libraries having Manuscript Collections (Rani, 2010). They are listed here under:

S.No.	Name of the Library	Location
1.	Thanjavur Maharaja Serfoji's Saraswati Mahal Library	Thanjavur
2.	Adayar Library	Chennai
3.	The Government Oriental Manuscript Library	Chennai
4.	Anup Sanskrit Library	Bikaner
5.	Rampur Raza Library	Rampur
6.	Rajasthan Oriental Research Institute	Jodhpur
7.	National Library	Kolkata
8.	Oriental Research Institute	Tirupati
9.	State Central Library	Hyderabad
10.	The Government Oriental Manuscript Library	Chennai
11.	Anup Sanskrit Library	Bikaner
12.	Rampur Raza Library	Rampur

Table 1.3: List of Public Libraries with Known Manuscript Collections in India

Source: (Rani, 2010)

Other important Manuscript repositories in India include Visva Bharati, Shantiniketan, Kolkata, West Bengal which has a huge collection of Sanskrit and Prakrit manuscripts, Bhandarkar Research Institute in Pune, Adayar library in Madras, Varendra research institute, Rajasahi, Asiatic Society of Bengal, etc. (Banerjee, 2010).

1.1.4 The challenges

The task of preservation of the great Indian cultural heritage is fraught with several challenges.

1. **Location and Collection**: Of all the challenges, locating the manuscripts, convincing the manuscript collectors to either handover the collection to a manuscript repository or carryout conservation by themselves is the toughest one. As Krishnakumar rightly points out, 'collection of manuscripts is not an easy task. Rules or procedures commonly applicable cannot be formulated since each case is different from the other' (Krishnakumar, 2010, p. 294). The places (temples, mutts, households, institutions, etc.) where manuscripts are found are termed as manuscript locations. The person who is engaged in the identification of manuscript locations and the collection of manuscripts can be called 'manuscript collector' and those who inform the manuscript locations can be termed as 'informants'. The informants act as connecting bridge

between the manuscript collector and manuscript custodians (Krishnakumar, 2010, p. 294). Despite the fact that most of the private collections of manuscripts are generally on the brink of deterioration, most of the manuscript collectors are averse to handover their pride possessions to any institution. One prime reason for such scepticism is due to the questionable trustworthiness of the manuscript custodian institutions.

This is evident from the classic case of Prof. Pritam Singh described by Rupinder Singh, Sanjeev Kumar & Deepak Agarwal in the book 'Manuscript and Manuscriptology in India: 'Prof. Pritam Singh, a renowned scholar wanted to hand over his collection of manuscripts to the Punjabi University, Patiala but changed his mind when manuscripts of Prof. Puran Singh went missing from this library'(Singh et al., 2010, p. 275).

Ancient Indian manuscripts are highly valued in the foreign markets, owing to which several Indian as well as foreign individuals indulged in illegal trade by deceiving the manuscripts owners in the past. These reported incidents resulted in lack of trust on part of the manuscript owners to repose faith on those who are genuinely working towards conservation of our great heritage.

It has been customary in several households to immerse manuscripts collections reverentially studied by the family head after his/her demise along with the ashes of the departed into the nearby rivers. The researcher is personally aware of such incidents that have taken place in the Kali Gandaki river, in Mustang region of Nepal, several such accounts of which were vividly described to him during his visit to Nepal by several reliable people there. Rupinder Singh et al (2010) point out that the MSS in one's collection may get spoilt due to daily offering of sandal paste, flowers, water and also by insects, yet he will prefer to submerge in water than to hand over to some scholar or institution. Similar is the situation in some public institution. Often officials in a manuscript center behave non-cooperatively and maintain that unless the material is published scholars are not allowed to get access to it.

2. **Apathy and Nonchalance:** Even after the knowledge of manuscript collections lying unattended in several parts in the adjoining courtiers of India, the nonchalance and apathy on the part of the decision makers proves to be the biggest hindrance. One classic case is the availability of innumerable

manuscripts lying unattended for centuries in the caves and caverns of Mustang region of Nepal. The researcher has brought to the notice of the top officials of IGNCA and NMM about those manuscripts and even submitted a detailed project proposal for surveying, collecting and conserving those manuscripts under the joint collaboration with the Nepalese government agencies. However, even after repeated reminders, the powers that be could not be woken up from their habitual apathetic slumber. Recognizing immeasurable value of manuscript wealth of Mustang region, several European explorers have been visiting the Mustang region since 2007 by obtaining special permits from the Nepalese government. These manuscripts are now under the mercy of these foreigners who are collecting, preserving and studying their content. What should have been the responsibility of the people belonging to the Indian culture is carried out by the westerners.

In 1970, the University of Hamburg founded what is known as the Nepal-German Manuscript Preservation Project in Nepal to preserve the extraordinary wealth of Nepalese manuscripts. After three decades of microfilming activity, the project came to an end in March 2002. A good number of the original manuscripts microfilmed under the project and stored in Tengboche in Khumbu and Agama house of Pashupati Nath Mandir, Kathmandu were burnt to ashes during fire accidents that happened in 1989 and 2005 respectively. We may warn ourselves that such a predicament is equally lurking on manuscript collections stored in various Indian repositories as well.

3. **Conservation**: Even though several libraries and institutions with significant collections have been notified as manuscript repositories, the condition of manuscripts housed in them is not very encouraging. In many centers, owing to lack of proper training, a significant proportion of manuscripts are not preserved scientifically. Quite a number of conservation activities carried out under the aegis of National Archives in eighties and nineties of last century were not reversible. For example, in several centers it can be observed that manuscripts were laminated with plastic sheets, owing to which the manuscripts inside have become stuck to the plastic lamination irrecoverably.

4. **Cataloguing**: There is no standard cataloguing format for manuscripts and so various repository centers catalogue their collections with various bibliographic descriptors.
5. **Microfilming**: Starting the early 60s manuscripts have been microfilmed in various collection centers. However the chemicals used in the film strips pale out and the image captured on them gets damaged over a period of time. There is an urgent need to convert this analogue storage into digital formats to save the time, effort and money invested in producing these microfilms.
6. **Digitization**: Generally the process of digitization is misconstrued as merely scanning or photographing the folios and saving the image. Such an uneditable image will render it unsuitable for searching within its content, considerably reducing its usability. Many digital images do not conform to the international standards.
7. **Indecipherability of Ancient Scripts**: Given India's immense linguistic diversity and sophistication, many documents are inaccessible because there is little knowledge of the languages and scripts used. One of the major challenges is that there are a dwindling number of scholars who can read, decipher, translate, take up research and interpret India's manuscripts.

   However the purview of the present research is limited only to the extent of conservation and digitization of manuscripts and does not cover the content of the manuscripts.
8. **Determining the subject and time period**: Often, the biggest challenge for the experts is to determine the subject and identify the time period. In many manuscripts time period is mentioned in the text somewhere, but sometimes it is not.
9. **User Access:** The most vital issue is of providing access to these manuscripts and ascertaining their use also.

1.2 Statement of the Problem:

The statement of the problem under study is **"Evaluative Study of Manuscript Conservation and Digital Preservation Efforts by National Mission for Manuscripts (NaMaMi) and Its Partner Centers in Maharashtra"**

1.2.1 Explanation of the Key Concepts:

a. Conservation: According to www.archivists.org website ("Dictionary of Archives Terminology," 2017), conservation refers to:

'1. The repair or stabilization of materials through chemical or physical treatment to ensure that they survive in their original form as long as possible. –

2. The profession devoted to the preservation of cultural property for the future through examination, documentation, treatment, and preventive care, supported by research and education.'

The website also mentions that:

'Conservation counters existing damage, as distinguished from preservation, which attempts to prevent damage. Conservation does not always eliminate evidence of damage; restoration includes techniques to return materials to their original appearances (which may include fabrication of missing pieces). - However, conservation is often used to include preservation activities'.

b. Digitization: Google dictionary (*Digitization Meaning - Google Search*, n.d.) defines digitization as 'The conversion of text, pictures, or sound into a digital form that can be processed by a computer'.

c. Digital preservation: Association for Library Collections and Technical Services (ALCTS) Preservation and Reformatting Section, a division of American Library Association conducted ALCTS Working Group on Defining Digital Preservation ALA Annual Conference, Washington, D.C., on June 24, 2007 and revised on 18th June 2009 defined the digital preservation as follows:

"Digital preservation combines policies, strategies and actions to ensure access to reformatted and born digital content regardless of the challenges of media failure and technological change. The goal of digital preservation is the accurate rendering of authenticated content over time" (ALCTS, 2009).

d. Manuscripts: Google dictionary (*Manuscript Meaning - Google Search*, n.d.) defines manuscripts as:

'a book, document, or piece of music written by hand rather than typed or printed'.

e. National Mission for Manuscripts:

The National Mission for Manuscripts was established in February 2003, by the Ministry of Tourism and Culture, Government of India, that seeks to unearth and preserve the vast manuscript wealth of India (*National Mission for Manuscripts*, n.d.).

f. Partner Centers:

An institution or organization partnering with NMM in the conservation and digitization of manuscripts. There are 14 such partner centers as of now of NMM in Maharashtra.

g. Maharashtra:

Maharashtra (abbr. MH) is a state in the western region of India and is India's second-most populous state and third-largest state by area. Spread over 307,713 km2 (118,809 sq mi), it is bordered by the Arabian Sea to the west and the Indian states of Karnataka, Telangana, Goa, Gujarat, Chhattisgarh, Madhya Pradesh and the Union territory of Dadra and Nagar Haveli ("Maharashtra," 2020).

Fig 1.1 The State of Maharashtra

h. Evaluative study:

Socialresearchmethods.net (Trochim, n.d.) provides to definitions of Evaluation as:

1. 'the systematic assessment of the worth or merit of some object'
2. 'the systematic acquisition and assessment of information to provide useful feedback about some object'

1.3 Objectives of the study:

1. To study the present status of conservation and preservation of Indian cultural Heritage in general and efforts of National Mission for Manuscripts (NMM) in particular.
2. To take an overview of availability of manuscripts and efforts taken in preservation of heritage collections (Manuscripts) in Maharashtra.
3. To identify the type of collection that is being conserved and digitized in NMM centers in Maharashtra.
4. To ascertain the availability of infrastructure (Building, furniture, equipments, Human resources and budget) for the conservation and digital preservation of heritage collections in NMM centers in Maharashtra.
5. To examine traditional procedures, practices, techniques, methods, mechanism, strategies and policy in searching, collecting, selecting, acquiring, processing, storing, conversing, preserving and disseminating heritage collections (Manuscripts) in NMM centers in Maharashtra.
6. To study modern technology, procedures, practices, techniques, methods, mechanism, strategies and policy in searching, collecting, selecting, acquiring, processing, storing, conversing, digitizing, preserving and retrieving (disseminating) heritage collections (Manuscripts) in NMM centers in Maharashtra.
7. To review methods adopted in digitization (in house or outsourcing) and application of hardware, software, metadata standards in digitization and digital preservation of heritage collections in NMM centers in Maharashtra.
8. To understand the challenges for conservation and digital preservation of heritage collections faced by NMM in general and partner centers particularly in Maharashtra.
9. To suggest a policy, framework and model for digitization and digital preservation of heritage collections so as to facilitate easy access and better usage of these materials.

1.4 Hypotheses:

1. Hypothesis 1: Various partner centers of NMM in Maharashtra have been established with similar objectives.
2. Hypothesis 2: Various partner center of NMM in Maharashtra have good facilities for the researchers.
3. Hypothesis 3: Various partner centers of NMM in Maharashtra primarily develop their collection through donations.
4. Hypothesis 4: Various partner centers of NMM in Maharashtra have sound financial standing.
5. Hypothesis 5: Various partner centers of NMM in Maharashtra have trained manpower.
6. Hypothesis 6: Various partner centers of NMM in Maharashtra do not differ significantly in the type of their manuscript collections.
7. Hypothesis 7: Various partner centers of NMM in Maharashtra have adequate storage facilities, equipment and conditions for maintenance of manuscripts in good condition.
8. Hypothesis 8: Various partner centers of NMM in Maharashtra have been able to preserve substantial number of manuscripts since their inception.
9. Hypothesis 9: Various partner centers of NMM in Maharashtra have definite system of organization of their manuscript collection.
10. Hypothesis 10: Various partner centers of NMM in Maharashtra have made use of their manuscript collections for publication of Catalogues and books.
11. Hypothesis 11: Various partner centers of NMM in Maharashtra have successfully digitized their manuscript collection.
12. Hypothesis 12: Various partner centers of NMM in Maharashtra have similar constraints and challenges in respect of locating, conserving and digital preservation of manuscripts.
13. Hypothesis 13: Various partner centers have well spelt out future plans.

1.5 Scope and Limitations:

The scope of the study is to carry out evaluative study of conservation and digital preservation activities carried out by NMM and its partner centers in Maharashtra. The research is limited to (a) the NMM centers in Maharashtra existing during the period of study and (b) manuscript conservation and digitization only and does not cover other culturally significant material numismatics and other artifacts.

1.6 Research Methodology:

a) Research Method: The nature of the present study required onsite observation and collection of data from NMM partnering centers in Maharashtra and devise a model plan for a conservation and digital preservation center for manuscripts. Therefore policies, standards and best practices adopted by these institutions are essential to frame a model conservation and digital preservation center for manuscripts. Hence, the researcher visited most of the manuscript collection centers in Maharashtra and personally inspected their facilities, procedures adopted in conserving and digitization including collection of heritage material and infrastructure and technical manpower available for digitization work. Descriptive method is employed for developing a conceptual framework.

b) Research Techniques: Survey technique is adopted for present study.

c) Tools of data collection: The data for analysis is collected through questionnaires, and direct interaction with the Heads of the partner centers, interviews and observation. Data is also collected by means of surveying various official documents published by NMM and its partner centers such as annuals reports, procedure guidelines, and brochures, Websites, etc.

d) Style manual employed: The present research report is documented in APA style.

1.7 Significance of Study:

Georges Cartier said “Manuscripts are the lifeblood of history. In them it is possible to trace the development of writers and their work, the lives of statesmen, the manifold activities of peoples. Their value is impossible to calculate, and even if it is perceived as relatively slight in the world context, within each culture and each country it is absolute” (Cartier, 1989).

The cultural heritage of any country is its backbone and preservation of ancient wisdom and knowledge dispersed in the form of manuscripts is of vital importance for any country. The identity, self esteem and pride of the nation heavily rests on its ancient legacy which it needs to carry down to the posterity. The Article 51A (f) of the constitution of India describes preservation of the culture of this great nation as one of the fundamental duties of the citizens. It states that the duty of every citizen of India shall be "to value and preserve the rich heritage of our composite culture."

Manuscripts and holographs are invaluable sources for the creation and preservation of art, history, culture, tradition of any land. It is realized world over the need to conserve the cultural heritage preserved for centuries in the form of manuscripts. Accordingly various educational commissions have envisaged preservation of cultural heritage of the land as one of the important mandates of Higher Education Institutes (HEI) apart from teaching and learning, research, publication and extension activities. The HEIs have a great responsibility to shoulder and preserve the traditional knowledge systems, heritage and cultural material. It must be realized that modernity cannot dissociate itself from the traditions.

With this as the backdrop, it is important to conduct an evaluative study of conservation activities carried out by NMM and its partner centers in Maharashtra, and assess their strengths and weaknesses so as to suggest a policy framework for effective conservation of heritage material especially the manuscripts. The present research is first of its kind carried out in Maharashtra and no previous study has ever been conducted to study the workings of National Mission for Manuscripts and its partner centers in the state.

1.7.1 International Status:

The importance of conservation and digital preservation of manuscripts for posterity has been recognized world over thanks to the efforts of UNESCO, IFLA, LoC and other organizations. These organizations have established standards and procedures for conservation and digitization of manuscripts. Countries rich in ancient cultures such as Greece, Egypt, Middle East, China that have known collection of ancient manuscripts have been working hard in preserving their cultural heritage to their posterity by actively engaging in the manuscript conservation and digitization.

In 1992, the UNESCO established a project titled 'The Memory of the World' for the 'preservation of, and access to, documentary heritage in various parts of the world' (UNESCO, 2017). The General Guidelines for this Programme were prepared through a contract with IFLA (International Federation of Library Associations), and ICA (International Council on Archives) which identified and listed irreparably damaged library collections and archive holdings across the world. The Programme is run with a vision that 'the world's documentary heritage belongs to all, should be fully preserved and protected for all and, with due recognition of cultural mores and practicalities, should be (made) permanently accessible to all without hindrance' (UNESCO, 2017).

The mission of the Memory of the World Programme is:

1. To facilitate preservation, by the most appropriate techniques, of the world's documentary heritage.
2. To assist universal access to documentary heritage.
3. To increase awareness worldwide of the existence and significance of documentary heritage.

Another noteworthy effort is the Manuscript Digitization Demonstration Project which was sponsored by the Library of Congress Preservation office in cooperation with the National Digital Library Program (NDLP) during 1994-97. Cognizant of the work being carried out by the Cornell University Library regarding the printed matter, the library recognized that manuscripts would make for a useful demonstration project at the Library of Congress. The objective of the project was to seek answers to the following questions: what type of image is best suited for the digitization of large manuscript collections, especially collections consisting mostly of twentieth century typescripts? What level of quality strikes the best balance between production economics and the requirements set by future uses of the images? Will the same type of image that offers high quality reformatting also provide efficient online access for researchers? (Louise et al., 1998)

There are over 7 libraries outside India where major collections of manuscripts of Indian origin exist. Some of the foreign libraries with such collections are (Hassel, 1974, p. 304):

S.No.	Country	Name of the Library
1.	**Denmark**	Royal Library, Copenhagen
2.	**France**	Bibliotheque Nationale, Paris
3.	**Germany**	Preussiche Stats, Bibliothek Berlin; Universitas Bibliothek; Leipzig, Staats Bibliothek, Marburg; Bayerishe Staats Bibliothek, Munchen
4.	**United Kingdom**	British Library, London; Royal Asiatic Society, London; Bodleian Library, Oxford; Indian Institute, Oxford; Cambridge University Library, Cambridge.
5.	**Nepal**	Durbar Library, Kathmandu & Royal Manuscript Library of Nepal
6.	**Pakistan**	Punjab University Library, Lahore
7.	**Sri Lanka**	Museum Library, Colombo

Table 1.4 Libraries outside India having Indian Manuscript Collections

Source: (Hassel, 1974, p. 304)

1.7.2 National Status:

India perhaps has one of the oldest and largest collections of manuscripts in the world. These manuscripts are in different languages and in different scripts. They are written on different kinds of materials like birch bark, palm leaf, cloth and paper. They are in the custody of different institutions like libraries, museums, monasteries, mutts and individuals. Only a small percentage of these manuscripts have been surveyed and catalogued. Catalogues are perhaps available for not more than 20-25% of the manuscript collections in the country. Experts estimate that almost all palm leaf manuscripts may perish due to wear and tear over the next 50 – 100 years. An estimated heritage wealth of India is as under:

Total number of manuscripts in India	50,00,000
Indian manuscripts available in European Countries	60,000
Indian manuscripts in South Asia and Asian Countries	1,50,000
Number of manuscripts recorded in catalogues	10,00,000 (Apporx.)

Table 1.5: Estimated Number of Manuscripts and their Spread

Source: (Singh et al., 2010, p. 273)

Percentage of manuscripts Language wise:

Sanskrit	67%
Other Indian Languages	25%
Arabic, Persian and Tibetan	8%

Table 1.6: Language wise Estimate of Indian Manuscripts

Source: (Rani, 2010, p. 278)

Concerned at the fact that an unknown number of manuscripts are still lying scattered across the country and no serious efforts to survey, document and preserve them are made, Dr. Raghavan, Professor of Sanskrit, University of Madras approached the University Grant Commission to appoint a manuscript committee. Taking cognizance of his recommendation, the U.G.C. appointed a manuscript committee under the chairmanship of Dr.V. Raghavan in 1959. This committee survey several places and found that the condition of manuscripts and the current state of their preservation was not satisfactory and made the following strong observation " unless a systematic policy for the collection, preservation and utilization of manuscripts was pursued in right way, there is a danger of manuscripts being taken out of the country by foreign agencies, as also destruction because of ignorance and negligence" (Deshpande & Panage, 2001).

The Indira Gandhi national center for the Arts (IGNCA) has covered around 2, 50,000 manuscripts. The Indian National Trust for Art and Cultural Heritage (INTACH) has already surveyed more than 300 sites in three districts and prepared an inventory of about 47,000 palm leaf and paper manuscripts.

The efforts to conserve national heritage was started with the establishment of Indira Gandhi National Center for Arts (IGNCA) by the Government of India which made appreciable efforts in identifying, locating cultural artifacts and conserving them. INGCA also played a pivotal role in establishing regional centers in various states to help conserve the fast eroding cultural legacy of India. However, thanks to the establishment of National Mission for Manuscripts (NMM) in 2003 by the Government of India, this effort received a fresh impetus. NMM is actively engaged in partnering with various regional institutions and organization in locating, procuring, conserving and digitizing the cultural heritage of India that is found in the form of manuscripts.

Another appreciable effort in the direction of preservation of Indian heritage is the creation of Traditional Knowledge Digital Library by the government of India. This repository, launched in 2011 focuses especially on medicinal plants and formulations used in Indian systems of medicine.

Digitization of Manuscript of the National Library of India undertook a pilot project entitled "Down Memory Lane" to digitize its rare and brittle books during1999 and 2001. The National Library of India holds a very rich collection of old and rare documents. It has 3000 volumes of paper manuscripts and 334 palm leaf manuscripts in Arabic, Persian, Urdu, Bengali, English, Hindi, Tamil and Sanskrit language, many of them with beautiful illustrations fine epigraphy and elegant bindings. Approximately 6601 books/manuscripts containing 2.5 million pages were scanned and archived in 548 CD-ROMs (Kumar & Shah, 2004, p. 34).

1.7.3 Regional Status:

Maharashtra has been relatively lagging behind in the manuscript locating, conserving and digitizing efforts as compared to its counter parts in North, East and South India. Maharashtra state has about 14 NMM partner centers and about 49 other centers also have manuscript collections. The list is appended as Appendix A at the end of the dissertation.

In Maharashtra Drukgyu Chopheling Monastery, Bandra and Thekchen ling monastery, Bhandara have Buddhist collection(Pathak, 2010, p. 19).

1.8 Chapterization

Chapter – I Introduction

This chapter describes what constitutes a heritage material and the characteristics and constituents features of manuscripts. It also provides history of manuscript preservation and challenges faced in locating, conserving and cataloguing manuscripts. The chapter explains the key concepts, objectives, hypothesis, scope and limitations, research methodology, significance of study, regional, national and international status of manuscript conservation, etc.

Chapter - II Review of Related Literature

This chapter takes review of dissertations, theses, journal articles, conference proceedings, books, book sections and reports, documents and government

publications on various aspects of manuscript conservation including collection development, organization, and various conservation, preservation and digitization practices and procedures in respect of manuscripts across the world.

Chapter - III Conservation and Digitization of Manuscripts

The standards as enunciated by IFLA, UNESCO, NMM and other professional bodies for cataloguing, conserving and digitizing manuscripts are described. The causes of deterioration, traditional methods of conservation, their effectiveness, and the modern methods of conservation, stocking and transportation, disaster preparedness are presented. The metadata standards for digitized content are also described.

Chapter - IV NMM and Manuscript Custodian Centers in Maharashtra

This chapter examines the history of various MSS Custodian Centers in Maharashtra, their collection development, conservation and digitization efforts. It also describes various constraints and challenges faced by them in locating, conserving and digitizing manuscripts.

Chapter – V Analysis and Interpretation of Data: Conservation and Digitization Efforts in NMM partner centers in Maharashtra

The data collected through direct observation, questionnaires and personal interviews is conceptually analyzed, tabulated and described. The data analysis and interpretation is compared with the hypotheses of the research to validate or invalidate the hypotheses.

Chapter - VI Summary of Findings, Outcomes, Recommendations, Suggestions for Future Research and Conclusion

The findings, outcomes of research, recommendations, suggestions for Future Research and conclusion are presented in this chapter.

Chapter – VII Policy framework and Model Reference Manual

This chapter suggests a policy framework and model manual for custodian, conservation & digital preservation centers for manuscripts. It suggests a broad policy framework and a reference manual for effectively locating, collecting, conserving, and digitally preserving the manuscripts.

REFERENCE:

ALCTS. (2009, June 18). *Definitions of Digital Preservation* [Text]. Association for Library Collections & Technical Services (ALCTS). http://www.ala.org/alcts/resources/preserv/2009def

Bagchi, A. (2010). A Glimpse of Scientific Knowledge in Ancient India: Evidence of Manuscript. In Subodh Gopal Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Banerjee, S. K. (2010). Manuscript Catalogue and Cataloguing. In Subodh Gopal Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Basu, R., & Das, K. (2009). *Aspects of Manuscriptology*. The Asiatic Society.

Bennett, J. G. (1965). *Long pilgrimage: The life and teaching of Sri Govindananda Bharati*. Giridharlal Manandhar; /z-wcorg/.

Biswas, S. C., & Prajapati, M. K. (1998). *Bibliographic survey of Indian manuscript catalogues: Being a union list of manuscript catalogues*. Eastern Book Linkers; /z-wcorg/.

Cartier, G. (1989). Libraries to the Rescue. *UNESCO Courier*.

Chatterjee, M. (2010). History of the Catalogue of Sanskrit Manuscripts. In Subodh Gopal Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Chavannes. (1905). *Journal Asiatique*, *1*.

Deshpande, N. J., & Panage, B. M. (2001, March). Digitization of Marathi Manuscripts. *CALIBER 2001*. CALIBER 2001, Pune.

Dictionary of Archives Terminology. (2017). In *Archives Terminology*. Society of American Archivists. https://www2.archivists.org/glossary/terms/c/conservation

digitization meaning—Google Search. (n.d.). Retrieved December 2, 2020, from https://www.google.co.in/search?%20Source%20=hp&ei=4XsnWsnBF8b38QXii6qwAw&q=digitization+meaning&oq=digiti&gs_l=psy-ab.1.0.35i39k1j0j0i131i67k1j0j0i131k1j0i67k1j0i%20131k1j0i67k1l3.1163.5229.0.6702.10.8.1.0.0.0.221.1422.0j3j4.8.0....0...1c.1.64.psy-ab..1.9.1637.6..0i10k1.206.dygKpDB_nRY

Documentation | INTACH Art and Material Heritage. (n.d.). Retrieved November 26, 2020, from http://heritageici.intach.org/?page_id=535

Encyclopedic. (n.d.). *Incaustum, Or Encaustum | Free Online Dictionary of Law Terms and Legal Definitions*. Retrieved November 30, 2020, from https://legaldictionary.lawin.org/incaustum-or-encaustum/

Gaur, R., & Chakraborty, M. (2009). Preservation and Access to Indian Manuscripts: A Knowledge Base of Indian Cultural Heritage Resources for Academic Libraries. *(ICAL-2009).* International Conference on Academic Libraries, New Delhi.

Harrod, L. M. (2005). Conservation. In R. Prytherch (Ed.), *HARROD'S LIBRARIANS' GLOSSARY AND REFERENCE BOOK* (X, p. 753). Ashgate Publishing.

Hassel, A. (1974). *A History of Libraries* (M. S. Pariohar, Trans.). Hindi Grantha Academy.

Jain, A. K., Kumar, S., Choudhury, S., Jain, K. B., & Sharma, B. (2013, August 17). Rare handwritten manuscript collection in Indic Languages at Scindia Oriental Research Institute (SORI), (India). *WLIC 2013: Future Libraries Infinite Possibilities*. IFLA WLIC 2013, Singapore.

Jones, W. (1786). On The Hindus. In *The Third Anniversary Discourse by the President, at the Asiatick Society of Bengal*. Manuel Cantopher.

Krishnakumar, M. N. (2010). Manuscript Collections of South India. In Subodh Gopal Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Kumar, S., & Shah, L. (2004). Digital Preservation of Manuscripts: A Case Study. *PLANNER - 2004*, 27–36.

Louise, H. S. I., Ott, D. M., & Fleischhauer, C. (1998). *Library of Congress Manuscript Digitization Demonstration Project Final Report*. https://memory.loc.gov/ammem/pictel/pictel.pdf

Maharashtra. (2020). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Maharashtra&oldid=990790643

Manuscript. (1908). In J. A. Murray (Ed.), *The Oxford English Dictionary: Vol. VI part II*.

manuscript meaning—Google Search. (n.d.). Retrieved December 2, 2020, from https://www.google.co.in/search?%20Source%20=hp&ei=4XsnWsnBF8b38QXii6qwAw&q=digitization+meaning&oq=digiti&gs_l=psy-ab.1.0.35i39k1j0j0i131i67k1j0j0i131k1j0i67k1j0i%20131k1j0i67k1l3.1163.5229.0.6702.10.8.1.0.0.0.221.1422.0j3j4.8.0....0...1c.1.64.psy-ab..1.9.1637.6..0i10k1.206.dygKpDB_nRY

Morley, G. (1962). *A Brief guide to the National Museum*. National Museum; /z-wcorg/.

Mosher, P. H. (1988). Manuscripts. In *The World Book Encyclopaedia: Vol. XIII*. World Book Inc.

Muller, M. (1859). *History of anciant Sanskrit literature*. Williams and Norgate.

Nandi, Subodh Gopal, & Palit, P. K. (Eds.). (2010). *Manuscript and Manuscriptology in India*.

National Mission for Manuscripts. (n.d.). Retrieved January 10, 2020, from https://namami.gov.in/

National Mission for Manuscripts. (2002). *Vihangama The IGNCA Newsletter*, *IV*(July-Aug). http://ignca.gov.in/national-mission-for-manuscripts/

Nehru, J. (1965). *The Discovery of India*. Asia Publishing House. https://books.google.co.in/books?id=RKsqAAAAYAAJ

Panage, B. M. (2003). *Conservation and preservation of library materials with special reference to digitization of rare materials* [PhD Thesis, Savitribai Phule Pune University]. http://hdl.handle.net/10603/175048

Pathak, S. K. (2010). Buddhism and Indo-Tibetan Literature: A Survey Linked to Manuscripts and Xylographs in India. In Subodh Gopal Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Rani, S. (2010). Manuscript Collections in Indian Public Libraries. In Subodh Gopal Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Roy, N. G. (2010). Anatomy of Manuscripts. In Subodh Gopal Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Sah, A. (Ed.). (2006). *Indigenous Methods and Manuscript Preservation*. National Mission for Manuscripts Department of Culture, Ministry of Tourism and Culture, Government of India& D K Printworld (p) Ltd.

Singh, R., Kumar, S., & Agarwal, D. (2010). Preservation, Conservtion and Digitization of Manuscripts: Problems & Prospects. In S.G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Subbarayappa, B. V. (1989). *A Concise History of Science in India* (D. M. Bose, S. N. Sen, & B. V. Subbarayappa, Eds.). [Published for the National Commission for the Compilation of History of Sciences in India by] Indian National Science Academy. https://books.google.co.in/books?id=WrTaAAAAMAAJ

Trochim, W. M. K. (n.d.). *Introduction to Evaluation*. Retrieved December 2, 2020, from https://conjointly.com/kb/introduction-to-evaluation/

UNESCO. (2017, March 16). *Memory of the World*. Memory of the World. https://en.unesco.org/programme/mow

CHAPTER – II
REVIEW OF RELATED LITERATURE

2.0 Introduction

2.1 Review of Dissertations and Theses

2.2 Review of Journal Articles

2.2.1 On Collection Development and Organization of Manuscripts

2.2.2 On the Nature of Manuscripts and Conservation

2.2.3 On Digitization and Digital Preservation

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2.3 Review of Conference Proceedings

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2.5 Review of Reports/Documents and Government publications

2.6 Conclusion

Chapter – II

Review of Related Literature

2.0 Introduction

The researcher searched literature related to the topic in the theses database of the INFLIBNET, the Shodhganga repository, various websites, books and journal research papers. This exhaustive search helped researcher to know previous allied work on the topic and provided a strong background enabling the researcher to contextualize the research problem. The review encompassed various aspects of the manuscripts such as the nature, collection development policies, organization and management of collection including classification and cataloguing, conservation, preservation and restoration techniques adopted, and finally digital preservation strategies adopted by various manuscript custodian agencies. For the ease of comprehension, review of literature carried out is grouped and presented here under the following headings:

1. Dissertations and theses
2. Journal Articles
3. Conference Proceedings
4. Books and Book Sections
5. Reports/Documents and Government publications

The reviews of related literature are arranged as per the date of occurring of documents. Documents published in the same year are further arranged alphabetically. APA Style Manual, 6th edition has been used for in-text parenthetical citations. Reference list is arranged alphabetically at the end of the chapter.

2.1 Review of Dissertations and Theses:

1. Way back in 1950, Munindranath Basu, a working librarian conducted a study on 'Museum Method and the Process of Cleaning and Preservation/Library Preservation' **(Basu, 1950)**. He was awarded doctoral degree by the University of Calcutta for this research. According to Chatterjee & Maity (2012) Basu is the first librarian in India to earn a doctorate for his thesis. This is perhaps the oldest doctoral research in the field of Library and Information Science (LIS) on preservation of heritage material. However, since the thesis is neither uploaded on the Shodhganga repository nor on the University of Calcutta website, it could

not be studied. Only a passing reference is here made of it. Sukhdev Singh (2015) also cites this study conducted by Shri. Munindranath Basu.

2. The manuscript repository of Guru Nanak Dev University was studies by **Chopra (1994)** for his doctoral degree. He found that improper handling, rough and careless use and repeated use of rare documents and manuscripts caused the manuscripts to deteriorate. He recommends creation of surrogate copies of the original source such as microfilming, scanning and reprography. This, he argues, helps in improving the shelf life of fragile old records as the readers get the information they require from the reproduced copies only thereby nullifying or almost reducing the load on the originals.
3. **Panage (2003)** studied *'Conservation and Preservation of Library Materials with Special Reference to Digitization of Rare Materials'* for his doctoral research at University of Pune. He studied the conservation and digitization techniques and procedures for library materials with a focus on rare material. In his dissertation he discussed various digital library models. He points out that there are basically two main objectives behind digitization: The first is to ensure the preservation of old and fragile materials and second is to provide greater access to original materials. He argues that excessive and inappropriate use and handling either by the library users or by the library staff of fragile material is one of the most destructive causes for the damage of such material. He also points out that lack of proper storage facilities, materials, lack of expertise and trained personnel, inadequate housekeeping practices as the chief causes for deterioration. Noting the environmental factors, he says extremes or variations of temperature and relative humidity, light, dust and industrial pollution as the chief factors affecting rare library material. He points to the World Information Report, 1998 which stated that the lifespan of paper media is more as compared to electronic media. He also laments that conservation and preservation is not included in the library and information science academic programs and underscores the need for their inclusion.
4. **Satyabati Devi Thiyam (2005)** studied the *'Manuscripts of Manipur in the Modern Perspective'*. She calls for improving the services provided to the research scholars, organizing awareness campaigns to sensitize the public, greater accessibility through descriptive catalogues and online hosting, digitization and publication. She strongly bats for formulating a legislative order so that all the

private custodians of manuscripts hand over their collection to a centrally located place managed by the government for greater access. She also recommends the governments to envisage an Integrated National Manuscripts Library System in a structured form. Since private manuscript custodians are generally averse to part with their collection even for a while, she recommends use of mobile digitization units to be taken to individual collectors and carrying out on the spot digitization.

5. Another research that studied 'Care and Preservation of Library Documents in Universities, Archives and Colleges of Punjab, Haryana and Chandigarh' is conducted by **Narang (2006)**. The study suggests digital imaging, like microfilming, as one of the effective techniques that indirectly helps in the preservation of rare material. Two kinds of remedial measures are also suggested in the thesis - Physical and Electronic Remedial Measures. The physical measures suggested can give a new lease of life to damaged rare books and manuscripts.
6. **P Sarasvathy's (2007)** study of *'Preservation and Conservation of Rare Materials in Select Libraries in Karnataka'* also throws some light on the state of affairs in respect of the libraries and manuscript collections centers in Karnataka. She enumerates various methods and techniques of preserving rare materials such as fumigation, binding, handling, chemical de-acidification, digital imaging, microfilming, digitization etc., and reminds us of the UNESCO's guidelines for preservation of rare materials. Governments of many countries such as UK, USA, France etc., have formulated national Preservation and Conservation policy and they have established National Archives to protect and preserve these resources. In the similar line, she recommends both the state and central governments to formulate a robust national Archival policy for the preservation and conservation of heritage content.
7. **Anup Kumar Das (2008)** undertook *'An Evaluative Study of Some Selected Libraries in India Undergoing the Process of Digitization'* for his doctoral degree. He critically examined different aspects of the Digital Library of India (DLI), the largest digitization initiative in India, such as collaboration pattern, digitization processes, metadata practices, information retrieval, etc. He notes that the DLI, owing to its digital presence and pan-India participation in its activities by over ninety organizations, is spread across various states of India, and has made available several thousands of rare books written in Indian languages as well as non-Indian languages through internet. Apart from this, he also describes

four stages in the digitization of collection by various libraries. In the first phase, the library initiates the process of digitization but neither a systematic storage nor a retrieval system is made available and so, at this stage, the digitized collections are not available either in intranet or internet channels. In the second phase the whole collection is digitized and made accessible on intranet. Some portion of whole digitized collection is also made publicly accessible through Internet channels. He attributes this partial and limited visibility of collection to many problems as perceived by the implementing agency such as bandwidth limitation, copyright restrictions, lack of high capacity web servers, and delays in quality checking before web enablement (p.324). In the third phase, though the whole digitized collection of the digital library is made accessible both on intranet and internet channels, the digitized collection lacks interoperability, as the collection is not made in tune with the OAI-PMH (Open Archives Initiative-Protocol for Metadata Harvesting) protocol, because of which, the digitized collection is not indexed by any secondary indexing service providers. As an example, he cites the case of the Digital Library of India project which does not support OAI-PMH-based metadata indexers so as to enhance the accessibility of its portal. The last phase culminates in the making of the digital content not only accessible and navigatable but also interoperable, providing full functionality to the users. This is the ideal digital repository condition to be emulated by all agencies looking to digitize their heritage content.

8. Another interesting study that revealed the state of affairs in respect of documentation and care of manuscripts in museums in the Eastern Indian states of Orissa, West Bengal, Bihar and Jharkhand is carried out by **Gauri Shankar Mahapatra (2008)**. Mahapatra emphasizes the need to educate general populace towards conservation of the heritage embodied in manuscripts. If public pride is aroused in such treasures, he argues, it would inevitably lead to a desire to protect, clean and restore and enhance what the ancestors have provided us and hand it down for posterity. For this he recommends organization of docent services, spotlight talks, film shows, lectures, exhibitions, extended programs, publications, workshops, provision of online information, etc.
9. **Anindita Kundu (2009)** carried out a micro study on the *'Conservation Care and Management of Manuscripts in Museums of West Bengal'*. The problems concerning manuscript collections of West Bengal are not very different from

those found in other parts of India. She notes with concern that some paper and palm leaf manuscripts become faded due to loss and discoloration of inks and pigments in some illustrated manuscripts. She found that some manuscripts have lost their mechanical strength due to splitting of surface; cracks develop in the folios due to mishandling, natural ageing or due to severe insect attack. Strength of some incised palm leaf manuscripts have been lost due to excess pressure given during scribing. Splitting of the surface of a few birch bark manuscripts with the passage of time due to loss of natural gum was evident. Besides, flexibility of some palm leaf manuscripts has been lost due to loss of natural oil present in them with time. Folios of some manuscripts get stuck by the adhesive used as binding medium for writing or making illustration or excreta of insects, due to high humid condition etc. She notes that it is very difficult to ascertain the date of the manuscript; most of the manuscripts bear no date and so, she suggests practices like paleography, style of writing, terminology, illustration, colophon, multiple dating, owners, writing materials, kind of ink, use of writing instruments and use of radioactive carbon method etc., for ascertaining the date of manuscripts, which according to her have been adopted by some repositories. She notes with concern that that the curatorial staffs of the repositories are indifferent about their duty, because they are not fully aware about the value of such manuscript collection. They have just kept their collection in a metal trunk or gunny bag and dumped them at one comer of the room. Some of them even do not bother to open the trunk or gunny bags even for a decade. Except some of the renowned museums, most of the repositories do not adopt proper preventive measures like periodical examination, proper documentation, cleaning, dusting, providing a stable environment by monitoring and regulating the macro and micro environment inside the manuscript repositories; control of biological organism by using various indigenous methods, Integrated Pest Management Programme, fungicides, insecticides etc., to check and control deterioration of their manuscript collection. Only some repositories have done microfilming and digital preservation so as to minimize the physical, chemical as well as biological deterioration of manuscript (p.392). Her study also revealed some of the most unwarranted actions carried out by the museum staff on the manuscripts such as use of metal pins, clips, cello tape, brown paper and newspaper, acidic gum like polyvinyl acetate emulsion for joining as well as repairing of fragile and broken

manuscripts. It is revealed that in some repositories various organic and inorganic chemicals have been used for fumigation and deacidification of manuscripts without considering the nature and character of materials used in manuscript. As a result deterioration of such manuscripts is accelerated instead of retarded. Most of the staff in the repository does not know how manuscripts are handled, displayed or stored. She notes that some repositories have used inferior quality material for making display and storage cases, and also do not know the proper packaging methods required during transport of manuscripts. Some of the repositories have kept their organic and inorganic collections in the same display as well as storage cases which is against the principles of conservation. Most of repositories do not have any written security policy and security personnel. Thus, her research reveals the sorry state of affairs in many archival centers.

10. The above contention that digitization is picking up in India is contested in the *'Study of Buddhist Manuscripts with Special Reference to Arunachal Pradesh Utilization Restoration and Digitization'* carried out by **Ningappa Motebennur Maltesh (2010)** . He contends that while the western countries have taken a lead in starting digital initiatives to preserve the manuscripts, such initiatives in India are either poorly organized or in primitive stage of development. He also contends that Information Technology has come with a promise to develop digital initiatives for manuscripts for preservation, dissemination and delivery and hence, according to him, digitization is the only ultimate time-tested solution to preserve these manuscripts for the future generation.

11. How well do the university libraries fare in conserving and digitizing their manuscript collection? This was the core research topic **Aarti Sharma (2011)** studied for her doctoral thesis. She studies four university libraries spread in Punjab, Haryana and Chandigarh. She notices steady increase in the budgetary allocations over the years for overall activities of the university libraries, but notes decrease in allocation for conservation and digitization of manuscripts. She also finds that the university libraries aggressively spent money for manuscript acquisition. Her study revealed that rare usage of manuscripts in all the university libraries was due to unawareness of users regarding collection, lack of knowledge of language and script of manuscripts, poor physical condition of manuscripts, inadequate knowledge of staff regarding collection. Lack of infrastructure facilities is also the reason of less use of manuscripts. Title and name of the

author are two search options adopted by the users to trace a particular manuscript. Her research revealed that none of the university libraries surveyed by her extend services such as lending of manuscripts, indexing, inter-library-loan, transcription, translation, open access, audio-visual services, automated translation, multi-media services, e-mail, and online full text searching. She identifies insects, rodents and ageing as the common cause for damage of the manuscripts in all the university libraries under study. She notes that university libraries under study also do not use emerging technologies like freezing, habitat modification, insect growth regulators to control insects.

12. In the research study conducted on *'Preservation and organization of manuscripts in the libraries of Andhra Pradesh'* **(Balakrishna, 2011)** it is revealed that many of the 'tala patra granthas' were destroyed during the period of British Rule in India. He points out that the method followed in the arrangement of manuscripts in archival library is not exactly the same as one generally finds in a library of printed books. In manuscripts libraries, similar to that of other libraries, an accession register is maintained. In this register the details regarding the date of possession of manuscripts, serial numbers, other details of the manuscripts such as the title, language, author, script, number of granthas (grantha-sankhya), place from where the manuscript is acquired, the nature of its acquirement i.e. whether as donation, by payment or as loan are recorded. The serial number given in the accession register is the accession number of a manuscript. It is also referred to as manuscript number. He notes that the working hours of the Manuscripts Libraries are not uniform due to differences in their managements. Among the existing staff in the sample libraries, only 41.2% of the staff are professionals and the remaining are semi-professionals (2.1%) or nonprofessionals (56.7%); only 6% are trained properly and the remaining 94% are untrained. Therefore, he argues that the competencies of staff working in the Manuscripts Libraries are not sufficient to preserve and organize the manuscripts effectively in the libraries. There is a significant difference between the professional status and training status of the staff and this requires a need for training for the existing staff, including the professional staff. This situation in the staff pattern calls for providing training for the untrained staff and make them professionals, otherwise they may not preserve and organize the manuscripts properly. His survey revealed that the storage rooms do not follow

standard preservation practices and have no climate control mechanisms in place, although the climate remains extremely stable at high humid levels. He also notes that no emergency planning or preservation policy due to a lack of specialists and funding.

13. **Seifi (2011)** studied *'Digitization and Digital Preservation of the Heritage Collection in Select Libraries in India and Iran: A Comparative Study'* for her doctoral research work at University of Mysore. She studied digitization and digital preservation of cultural heritage practices adopted in India, Iran, other Asian countries, Africa, Europe and New Zealand and Australia and carried out comparative study of fifteen libraries involved in digitization and digital preservation activities in India and Iran. She noted that human resource and IT support are the main problems faced by Indian libraries in their digitization efforts. She also underscored the need for creation of a national digital repository to facilitate access to the nation's heritage resources and avoid duplication of efforts in digitization. In her research she found 'enhanced access' as the main reason for digitizing the collection by the libraries. 'Preservation' and 'reduction in handling' were the other reasons cited by the libraries having heritage collection for digitizing their collections. 'Condition' of the heritage collection and 'demand' are the other factors that drove the libraries in India and Iran to go for digitization of their collections.
14. In his dissertation work titled *'A Critical Study of Preservation Techniques for Sanchi Manuscripts of Assam'* submitted to the Guwahati University, **Utpal Das (2013)** points out to the outcome of various studies, researches and experiments which indicate that controlling of the environmental factors like temperature, humidity and light, can prevent significantly the deterioration of sensitive and fragile manuscripts. He says microclimate is more important than macroclimate in case of manuscripts. To deter the microbial growth he recommends " a relative humidity of 50% and a temperature around 60 F (16°C) for storage areas, 24 hours a day, 365 days a year" (p. 178). He recommends use of state-of-the-art technology viz., HVAC and Air Conditioning systems, dehumidifiers, dehydrating chemicals, etc., to control temperature and relative humidity in an archive or repository. Pointing to the UGC 2007 notification, which was notified owing to the efforts of the National Mission for Manuscripts, he underscores the

need to include Manuscriptology, conservation and preservation as part of the university curriculum in every university.

15. Do the art manuscripts also face the same problems as any other manuscripts or do they require any special attention and care? This issue gets its answers from the research study carried out by **Amit Kumar (2014)** who studied critically the art manuscripts of Himachal Pradesh. He points out that only a very small portion of extant manuscripts in India has been surveyed and documented properly and highlights the fear of the experts that almost all the palm leaf manuscripts will perish in the near future due to decay, wear and tear. Survey in various districts of Himachal Pradesh conducted by him revealed that some households destroyed many important manuscripts and literature on Tantra and other forms of knowledge, written in Sanskrit, Persian, Urdu, Hindi, Bhoti and Pali and other local unidentified dialects for fear for reprisals from the police and increasing inroads made by the modern literacy and education. It is revealed in his survey that some householders burnt their manuscripts and others threw them in the river. This research reminds us of the urgency with which NMM and other agency should work toward locating and collecting the manuscript heritage and protect them from being permanently lost in time.

16. The conservation and preservation efforts in Manipur are also not very different from what is reported in West Bengal and other parts of the country. **Laishram Sadhana Devi (2014)** studied the 'Conservation and Preservation of Manuscripts in Manipur' for her doctoral degree. From her doctoral dissertation it is revealed that in Manipur, old manuscripts written in archaic script are known as 'Puya' which are considered sacred and holy. Scholars well versed in the Puyas are called Maichous who worship them with veneration. The Puyas were rich sources of history and folklore. She points out that the local native custodians of manuscripts do not have easy access to conservation related information providing institutions or authorities such as NMM or National Archives of India. Nor do the native custodians possess adequate information or knowledge of the scientific method and standard preservation mechanism. Therefore, paying frequent visits to the local custodians is highly necessary for communicating to them the essential knowledge or information about the modern up-to-date methods of the preservation and conservation of the Manuscripts.

She points out that all the custodians of old Manuscripts, be he a 'maichou' (scholar) or a layman, knew the art of conservation and preservation. She lists out traditional techniques such as treating written surfaces of the Puyas with the juice or pulp of marigold, sunflower, trumpet flower, tobacco-leaf, rubbing the written surfaces of the manuscripts with alum and blue vitriol, etc. All these measures were meant to ward off insects, rodents and pests from biting, gnawing and damaging the manuscripts. For safe keeping, easy carrying and to prevent from accidental fall and careless handling, the old Manuscripts used to be compressed between two wooden planks of corresponding size very tightly and then bound with a rope. This measure greatly helped to prevent the absorption of water vapor, which in turn protected the manuscript from mould that damaged and decayed the leaves of the Manuscript. Such compressed manuscripts in turn were wrapped with a cloth for further protection from insects, pests, rodents, dirt, dust and decay. She points out that this method is in complete agreement with the modern scientific method of preservation and conservation of manuscripts.

Another indigenous method of conservation and preservation of the Puyas was to keep the manuscripts in a 'tabu', a special basket with a cover, and then keep the 'tabu' on a hanging structure called 'lap', made of wooden rods or bamboo strips or a wooden board having holes, over the hearth or family fireplace, which served the purpose of a safe custody of the Manuscripts. However, warming the 'tabu' on the 'lap' with heat from the hearth or fireplace negatively affected the health of the Manuscripts, and is against the recommendations of National Mission for Manuscripts. Sunning the Manuscripts in sun-light was also a common practice adopted by the Puya experts or custodians for preservation of them. This practice also is quite incompatible with modern scientific method of conservation and preservation.

17. **Mazumdar Nirmal Ranjan (2015)** studied *'Management of Manuscript Collection in Assam in Digital Era - A Practical Approach Using ICT Tools'*. Having studied two existing national manuscript databases of India, he proposes a model database and recommends embedding of more search options to make such database more user-friendly. He recommends creation of digital surrogates and providing access to those materials which are not used much owing to their least or no accessibility. According to him, 90.91% repositories in Assam have

their manuscript collections that can be marked as 'Good'. His study found that 45.46 % repositories keep their records of manuscript collection in computerized form and that 57.58% repositories have already digitized their manuscript collections. It is also found that the percentage of professional, semi-professional and non-professional staff is 39.48%, 10.52% and 50 % respectively. He recommends preparation of a directory detailing all manuscript repositories of Assam. He also underscores the need for the formulation of standard policy for preservation, digitization and access to these treasures of knowledge. Experts from the leading repositories and libraries, he suggests, should extend their help to the other organizations especially to the religious institutions where there is a lack of trained manpower. He also recommends formation of a state level apex body for managing all the manuscript repositories of Assam. Another significant recommendation is to upgrade the existing repositories to model repositories by selecting every year, a repository as model repository region-wise, state wise and district-wise by the state and the central governments.

18. *'Preservation and Conservation of Manuscripts and Rare Documents in National Archives of India and National Mission for Manuscripts'* is studied by **Sukhdev Singh (2015)**. Data collected by him from NAI shows that it is making use of both the latest and indigenous methods of preservation. He concludes that the NAI is fully competent in preserving the old archival records. On the other hand, he investigated the working of 13 MRCs located in the North zone. Pathetically, he finds that only 2 MRCs are making use of latest and indigenous techniques to preserve their holdings, 9 are making use of one or two techniques for preserving their records and 2 are not making use of any technique. NAI being the most important custodian of these records is equipped with professionally qualified workforce. He points out that Hand-Lamination process using cellulose acetate foil and tissue paper for repair of records is the invention of the NAI and has been acclaimed and used worldwide and that they are continuously experimenting, innovating and funding libraries having rare books and manuscripts. Data collected from MRCs shows that majority of the staff members (70%) in different MRCs are professionally trained and are familiar with the latest techniques of preservation and conservation implying that only 30% are not professionally trained. Moreover, they keep themselves abreast with the new techniques by

attending and participating in workshops organized by the Mission from time to time.

National Archives of India is fully and adequately staffed with a workforce of more than 200 technical and skilled staff. It also employs outsourced staff under some projects to clear the backlog of preserving certain documents on priority. Personnel working in Conservation Unit are trained in using preservation and conservation techniques. He notes that the technical staff is trained and most of the staff has been trained in its own School of Archival Studies. On the other hand, the state of affairs of MRCs is very discouraging as 77% of them are facing the problem of shortage of staff and lack of facilities for preservation and conservation of the archival materials. Because of understaffing, only routine tasks are carried out and there is no one to address the problems regarding the preservation and conservation of rare materials. His study reveals that that the library staff is ignoring the historical value of the records.

NAI being the premier agency and located in national capital does not face the problems as faced by the MRCs. His research reveals that the NAI staff is technically trained in handling the preservation and conservation of manuscripts and rare documents. They are experts in their fields. Data collected from NAI depicts that the NAI has an air-conditioned and spacious building with impressive architecture in two wings: old and new with good facility of research room for scholars consulting the records. In all there are six floors in both the wings to systematically and safely house the records, books, manuscripts and other rare archival materials. It is maintained by the authorities that the building is free of rodents, insects, dampness and fungus. Overall condition of the place where manuscripts and archival records are kept is good. Method of storage of fragile and endangered records is certainly crucial and needs a close attention for the longevity of the heritage records. Analysis of data shows MRCs are not fully competent and lack expertise in the storage of records as they are storing their records in boxes, cupboards etc. but these also need to have some sort of preservative or insect repellent in them so as to ward off the insects. Only 2 MRCs (15.4%) are partially air conditioned and 11 MRCs (84.6%) are not air conditioned. This shows that the dust is certainly settling on the records making them fertile for the growth of microorganisms.

19. **Trupti Dattatraya More (2015)** undertook a study titled *'Role of Oriental Libraries in India with Special Reference to Deccan'*. Her study encompassed oriental libraries in Deccan region covering states of Andhra Pradesh, Telangana, Karnataka and Maharashtra. Her survey revealed that majority of oriental libraries in Deccan does not have separate budgetary provision for purchasing and maintenance of manuscripts. She notes a positive development that the bibliographic control over the manuscript collection is growing strong, with many oriental libraries publishing descriptive catalogues of their manuscripts. While some libraries are using authentic methods of preservation in their routines like fumigation, de-acidification, and lamination etc, there are still majority of libraries which are using organic methods of preservation and using natural products. She strongly recommends provision of separate budgetary allocations, deputation of personnel for periodic training, publication of computerized descriptive catalogues and making available the digital collection online. She informs that digitization of manuscripts is slowly but gradually picking up.
20. **Vismay Raval (2016)** studied the *'Heritage preservation in Indian culture, modern practice and their possible integration with special reference to manuscripts'*. He debunks the often held wrong view that the technique of conservation is imported from western lands into India and rightly points out that the knowledge of preservation is not new to Indians. Care of manuscripts was a major concern in the past and efforts were made to protect them from the different agents of deterioration. For centuries custodians of collections in India have used various natural materials for the preservation of their manuscripts. The methods used to save the manuscripts were based on experience and knowledge of herbs and other natural materials and these practices were passed down from generation to generation.

    With the advent of new technologies in the field of conservation, and also with the changes in social and living systems, the traditional practices and systems of conservation have fallen to disuse. At the same time, in spite of the advent of suitable chemicals for preservation, traditional methods of preservation are in practice in some of the libraries and manuscript repositories in India.

    He notes with concern that most of the modern materials used today to counter insect attack are relatively drastic and toxic. It is therefore important to re-

evaluate the traditional materials which are in use and also to explore the possibility of using them with some modifications. If required, conventional insecticides, at the same time, should not be too readily dismissed in favor of non-chemical methods as it is better to work with products which have a long history and for which a lot of information regarding their advantages and disadvantages is available, he argues.

His argument is fair: indigenous knowledge is important because, local knowledge can help find the best solution to a development solution with fewer side effects, further more it represents the successful ways in which our ancestors have dealt with the rich heritage. The theme of utilizing existing knowledge to create appropriate solutions occurs repeatedly in his thesis.

The moot point of his argument is that use of indigenous knowledge to find the best solutions for a culture because, he argues, the solutions created must be economically and culturally acceptable to the society being aided.

21. **P. Madhusudan** conducted a study on the *'Digitization of Manuscripts in Oriental Libraries in South India'* **(Madhusudan, 2017)**. He found out that all the oriental libraries give topmost priority to digital preservation and that majority of the oriental libraries (68.75%) do not prefer to carry out digitization with outsourcing personnel. His study revealed that a high percentage (93.75%) among oriental libraries do not have specific guidelines relating to preventive conservation of manuscripts. Three specific digital formats TIFF, JPEG and PDF are being managed currently by the oriental libraries. However, a high percent among oriental libraries (81.25%) are planning to manage their digital collections in PDF. All the oriental libraries surveyed by him are planning to digitize their entire manuscript collection. He observes inadequacy of funding towards digitization.
22. **Sanjay lal Sah (2017)** studied the manuscript tradition of Uttarakhand from the beginning to 1900 AD. He makes a very apt statement when he points out that human ignorance, selfishness and nonchalance are more harmful to the survival of a manuscript than the environmental and biological factors put together. He informs that determining the time period of manuscripts is a challenging task particularly in case of those manuscripts written prior to 12th century AD. However, it may be pointed out that his research focuses more on the content of

the manuscripts rather than the condition, preservation and their digitization and hence does not stay relevant for the present study.

23. Efficacy of indigenous methods in the prevention of biodeterioration, particularly of those museum collections made up of textile and paper objects in tropical climate was studied by **De Soumoni (2018)** for her doctoral study. Her effort, in her own words, was to suggest solutions 'to the museums that are in perpetual want of funds and skill, an indigenous solution to the problem of biodeterioration of textile and paper objects in their collection by using local materials and semi-skilled manpower' (p.255). Admitting that no effort can completely control the biological cycle of ageing, decomposition and reuse of compounds, to which all organic materials are subjected, she however points out that proper preventive measures such as regular housekeeping, proper maintenance of temperature and humidity, use of natural insect repellants, etc., can slow down the process of degradation and deterioration of textile and paper objects. In case of paper manuscripts she also recommends use of acid-free solander boxes and wrapping of manuscripts with red cotton or silk cloth. A balanced, comprehensive and integrated approach is what she recommends in the pest management in the museum/repository.

24. For any manuscript resource center, surveying unchartered places, locating manuscripts, and convincing the custodians of the manuscripts to handover their collections to a better organized repository, where the heritage material could survive the vagaries of time, is quite a big challenge. Keeping steady flow of new material and thus, ensure continuous development of collection is a task that should keep any seriously working collection centers on their toes. How do important resource centers in India like National Library (NL) Kolkata, Rampur Raza Library Rampur (RRL) and Maulana Azad Library (MAL) Aligarh ensure development and management of their collections, the shortcomings in their policies, methods and preservation strategies is studied by **Nida Khan(2019)**. She bats for preservation of manuscript content through digitization in the first place. Her research revealed that the RRL has 17,000 manuscripts followed by MAL with approximately 16,000 manuscripts whereas the National Library has only 5,744 manuscripts. The collection development in these libraries is mostly through gifts and donations. NL and RRL have a written collection development policy. While NL follows the preservation standard of the Rare Books and

Manuscript Section of American Library Association (RBMS) for preservation of its manuscripts, MAL follows International Organization for Standardization (ISO) for manuscripts. RRL does not follow any of the preservation standards for manuscripts.

NL carries out its digital preservation of manuscripts by following METS standard while as MAL carries out its digital preservation of manuscripts by using PREMIS, METS and ISO digital preservation standards for interoperability. It may be noted that RRL is not using any of the standards for digital preservation of its manuscripts for interoperability. The libraries carry their digital accessibility by following Z39.50, Dublin core and MARC standards. The libraries provide microfilms, microfiches, digitized photos, magnetic discs and CD-ROMs for duplicating the manuscripts and use techniques of migration, replication, scanning, metadata creation and photography of manuscripts in preserving the manuscripts digitally. As regards to finances, the libraries receive special budgetary grants for the conservation of their manuscripts from the Ministry of Culture, Government of India and the University Grants Commission (UGC). The libraries use procedures like re-housing of the collection, preservation repairs, re-binding of the manuscripts, if necessary. The libraries also practice methods like oiling, aqueous de-acidification, non-aqueous de-acidification, vapor phase de-acidification, fumigation, resizing, minor repairs, encapsulation, filling holes, relining, flattening, encapsulation and lamination for treating the manuscripts. An appropriate storage environment is also being provided to preserve the manuscripts in the libraries like the controlling of heat, temperature and humidity of the collection room, providing dust free storage areas, proper air circulation, shelving and pollution free stack areas and making anti pollution strategies to safeguard the manuscripts. The libraries use dry brushing, small hand held vacuum cleaner, soft cotton cloth and flat soft brush for cleaning and maintaining the physical copies of manuscripts in good condition. Although, a number of processes are underway to conserve and preserve the manuscripts properly, the researcher notes that problems of wear and tear, yellowing and embrittlement, problem of water stains, deteriorated ink, evidence of insect infestation, evidence of poor handling, soil and surface dirt are still prevalent in these libraries.

2.2 Review of Journal Articles

2.2.1 On Collection Development and Organization of Manuscripts:

1. Robert B Downs (1957), the then Director, University of Illinois Library and Library School while discussing about collection development in his article titled *'Collecting manuscripts by libraries'* says that 'an intelligent acquisition policy for manuscript collections pre-supposes a definite plan, i.e., what is to be collected'. As regards to what kind of manuscripts are to be preserved, he says two classes of material should nearly always be preserved - personal papers and records of clubs and other organizations. He points out that the bulk of most personal papers is composed of letters, and even if such collection belongs to unimportant people, they may contain interesting and valuable data. He argues that the historians are no longer interested solely in the personal papers of prominent personages since the records left by obscure and unknown persons also frequently shed much light on historical events. As regards to when a repository should approach a prospective manuscript donor, Downs says that there are certain psychological moments conducive for broaching the possibility of donation. He says an individual is more likely to be interested in placing his papers in a public institution shortly after retirement from active service, and also is apt at this stage to have the time to assemble, sort out, and organize the materials for deposit. Another possibility is to get in touch with the widow or other relatives of an individual, with whose papers one is concerned. This step should be taken as promptly as good taste will permit after the death of the person with whom the collection deals; otherwise, it may be found that valuable records have been destroyed in housecleaning operations. There is the point, too, that during this period a family is usually most receptive to the idea of presenting papers for preservation to a public institution. This immediately reminds us of the sorrow events described in the previous pages about how manuscripts were immersed or burnt after death in Himachal Pradesh and Nepal.

2. A very insightful piece is written by **Stewart (1976)** about the then existing manuscript collection procedures and policies in his article titled *'A Primer on Manuscript Field Work'.* In his opening remarks, he complains that even in the professional literature, the process of acquirement of manuscripts for institutional collections has received little systematic attention, most of which has focused on manuscript administration, definition of collecting policy, and competition between

repositories. He maintains that discussions of collecting manuscripts lack scientific analysis and rather tend to be anecdotal, rich only in illustrative example. He argues that two important factors determine the kind and quality of collection acquired by any repository. They are collector's personality, particularly traits such as curiosity, empathy and perseverance on one hand and chance discovery of major collections. He argues that these two factors which ought to have been taken into consideration for developing guidelines for developing an institutional manuscript program are not included most of the institutional policies, leaving the novice field collector without any guidelines. He also points out that acquisition work lacks a professional vocabulary.

3. Another interesting article that focused primarily on collection development policies is authored by **Phillips (1984)** titled *'Developing collecting policies for manuscript collections'.* Underscoring the need for formulating a well thought out collection development policy that will 'eliminate problems of the future, minimize competition, and provide a possibility for deaccessioning', the author provides an eighteen-part model policy to the archivists based on components advocated in library literature. Pointing out that there are currently no guidelines for collection development policies for manuscripts even though the American Library Association does provide a beginning with its "Guidelines for the Formulation of Collection Development Policies," he notes that these guidelines are not designed for manuscript collections. His model policy encompasses goals and objectives, procedure for deaccessioning, research potential of materials, and procedures for carrying out policies. The model is claimed to improve quality of manuscripts collections, diminish the competition and more diligent usage of resources.

4. In the article titled *'We are what we collect, we collect what we are: Archives and the construction of identity'* **Kaplan (2000)** argues that the archivists should be cognizant of the fact that they are major players in the business of identity politics, whether they are conscious of it or not. Taking the example of the establishment and early years of the American Jewish Historical Society, the oldest extant ethnic historical society in the United States and the construction of American/Jewish identities, he maintains that identity of a group or community is a social fiction, constructed culturally for political and historical reasons. He says what records and documents archivists decide to collect of a particular community has important bearing on the identity of that community and over a period the community's self

image is moulded and determined by it. Hence it is vitally important to preserve the right documents to uptick the national pride.

5. Another interesting article relating to collection development policies for manuscripts published in the American Archivist is authored by **Sauer (2001)** who surveyed manuscript repositories in the US. In his paper titled '*Doing the best we can? The use of collection development policies and cooperative collecting activities at manuscript repositories',* Sauer presents written collection development policies and cooperative collecting activities as two tools that archivists should use in the course of creating and adding to their repositories' collections. He advocates written collection development policies as a way to ensure that collections have a coherent and well-defined focus, and describes cooperative collecting practices as a way to ensure that related materials are not scattered among far-flung repositories and that repositories' scarce resources are not needlessly squandered on unnecessary competitiveness for collections. The survey conducted by him in the US manuscript repositories reveals that not everyone is convinced of the usefulness of collection development policies. Yet, the author suggests that repositories should take efforts to make their collection development policies easily accessible and widely disseminated. The author leaves the reader with a positive note stating that cooperation is certainly possible among the manuscript repositories, collection development policies can be written, and that there are definite benefits to be realized when repositories invest in these practices.

6. In the paper titled *'The Nature of Archives and Manuscripts'* the author **(Jimerson, 2002)** focuses on the issues related to the organization of manuscripts. He argues that the significance of manuscripts and archival material is not due to the subject content they possess but rather from the context of their creation. He deliberates on various archival principles of provenance, original order and collective description principles as well as methodologies, which according to him will be helpful in effectively managing archives and manuscripts in the libraries. He describes manuscripts as natural, organic, impartial, authentic and unique materials and points out that the principles and theories applicable to manuscript collection centers are different from the principles and theories developed by the librarians for the organization of books, journals, maps, and other material resources. In the same paper the author emphasizes that manuscripts must be organized and described using standards that authorize information exchange and access through national networks.

He maintains that the descriptive cataloguing of manuscripts provides the essential information for intellectual and physical control of manuscripts.

7. In another article published a year later, **Jimerson (2003)** in his paper *'Deciding What to Collect'* says collection development policies which involve donor relations, legal and fiscal concerns, and accurate recordkeeping, are dependent on the institution's mission and goals. He contends that collection development which, once considered an almost a routine process, is no longer so and that archivists must consciously decide what to collect and preserve. However he also admits that defining an institutional collecting policy for manuscripts and archives has recently been challenged by postmodernists who contend that the decision of what to collect is not neutral or objective, but a mediated construct based on cultural values. The challenge before manuscript collecting repositories is that they decide how to develop an effective strategy for archival acquisition in the twenty-first century. The author discusses some of the factors that affect the decisions about what to collect. Whether working in institutional archives or manuscript collecting repositories, archivists must consciously evolve the policy for collection development of manuscripts based on the donor relations, maintaining accurate records of donor contacts, deeds of gift or transfer records, accessions, and other information pertaining to manuscripts and archives. He points out that archivists cannot save everything. By minimizing personal biases and ensuring adequate documentation of all aspects of society, he contends, decisions on what is to be preserved can be effectively made.

8. Underscoring the importance of rare materials for academic libraries, **Potter & Holley (2010)**, in *'Rare Material in Academic Libraries'* maintain that collecting rare materials is important for scholarly research. The authors argue that, owing to their very nature, rare materials require special expertise in their acquisition, processing, storage, and use. The paper is an attempt to summarize recent trends in collecting rare materials in academic libraries. In the rapidly changing scenario after the arrival of the internet and rapidly declining library budgets, the authors underscore the need for creative ways to find out and add rare materials to their collections by the academic libraries. Even though digitization is making rare materials more accessible, they contend, it certainly cannot substitute the use of the originals in all cases.

While the above articles deliberate on the formulation of collection development policies, the following review of literature is a survey of nature of manuscripts and conservation.

2.2.2 On the Nature of Manuscripts and Conservation:

9. Chakravarti (1947) studied the physical properties of palm leaves. Interestingly, he mentions that the palm leaf is four times stronger than a good quality handmade paper. The article titled 'A Study on Palm leaf Manuscripts' published in the first volume of the journal titled 'The Indian Archives' describes other salient features of palm leaf manuscripts. All the coastal states of India invariably produced millions of manuscripts over two millennia of which only a few thousand survive in the present day.

10. Termites or white ants are the greatest threat to palm-leaf manuscripts. Termites pose greatest threat in the dry and arid regions of Rajasthan. **Suri (1947)** points to an interesting traditional practice adopted in Jaisalmir for keeping manuscripts safe. He mentions that small bags of a particular kind of grass known as 'Panadi' are kept among the manuscripts bundles that saves them from white ant.

11. Padhi (1974) informs that there are two kinds of palm leaves that were used in ancient times for writing. They are Sritala and Tala. Stating that palm-leaf manuscripts are in abundance in Odisha, he describes various indigenous methods of preservation that include smearing of turmeric paste, keeping powered neem leaves in the racks containing palm leaf manuscripts, ghorabach, kumkum fruit and a paste mixing the juice of country bean, Eclipta Alba and Black Thorn Apple Stramonium. He also informs how periodic drying of manuscripts under tender sun light effectively contained microbial infestation.

12. Shukla (1980) in his article published in the Indian Library Movement (now known as International Library Movement) lists out several factors such as dust, fungus, termites and other worms and insects, dampness, etc., that affect the collection in any archival center. He gives a general account of preventive steps that can be taken to thwart the process of deterioration and outlines curation for effective preservation of archival materials.

13. Sahoo & Mohanty (2004) published an article titled '*Indigenous Methods of Preserving Manuscripts: an Overview'* in 'The Orissa Historical Research Journal', a government of Orissa publication in which they strongly bat for use of traditional herbal remedies to contain infestation in manuscript collection centers. They argue that traditional practices of preserving documents practiced in India for centuries are better in combating the challenges posed by the nature such as heat, light, dust and

humidity than the modern methods as there are minimal health hazards from them. They also do not adversely affect the materials preserved. They conclude that even in the modern times where the advent of technology has brought in new conservation practices, the traditional methods of preservation are still effective.

14. *'Traditional Writing System in Southern India - Palm Leaf Manuscripts'* is a research paper **(Kumar et al., 2009)** which notes that palm leaf manuscripts are one of the oldest media of writing in South India and even many in South East Asian countries. The paper describes various kinds of palm leaves and informs that only a few varieties are used for writing. The paper notes several ways of processing palm leaves which differ from region to region. Since palm leaf manuscripts are organic in nature they are susceptible to different types of deterioration. If these are not preserved properly they are subject to physical damage and decay. It enumerates factors responsible for the deterioration of palm leaves. Some of the most common deteriorating agents are climatic factors, light, insects, constant handling and unfavorable storage. To prevent from such defects, the paper notes, palm leaves are treated with special preservatives.

15. Even though there are many chemical based modern conservation techniques developed in the recent past, their implementation requires training and expertise and often they are quite expensive. Many researchers are of the view that conventional wisdom is safer and saner option that use of chemical methods. **Mishra (2012)** while giving an overview of indigenous methods used for conservation in his paper *'Indigenous Method of Manuscript Conservation'* points out that indigenous materials are eco friendly and pose no harmful effects. More importantly, he emphasizes that the use indigenous materials such as turmeric, black cumin, cinnamon, neem leaves, eucalyptus oil, etc., does not require much expertise and are quite inexpensive.

16. The International Journal of Academic Research published several articles on conservation of heritage material including monuments, artifacts and manuscripts in its second volume published in 2015. In one of the articles, titled *'New Reflections on Curative Conservation of Manuscripts'* **Anuradha (2015)** expresses anguish that the rich manuscript wealth of India today faces a threat of survival. She says it is the moral responsibility of everyone to preserve these valuable manuscripts and mentions the role played by government and non-government institutions in creating awareness about the conservation of manuscripts. Having outlined the major reasons behind the deterioration of the MSS as environmental, biological, chemical, human factors and

natural disasters, she lists out standard preventive and curative procedures for prevention of physical damage such as cleaning of the almirahs, dusting, good handling practices, mounting using acid free mount boards and other techniques of mounting, fumigation, insecticidal papers, fungicidal papers, use of buffer paper, , acid free boxes and folders for collection etc. She also mentions indigenous techniques for preserving manuscripts and discusses modern day scientific curative techniques. She describes three levels of heritage material according to their need for conservation: "first, those that still have some useful life remaining; second, those that have no useful life remaining, so that all that can be done is to save their contents; and third, those that have such unusual intrinsic value that expensive, special repair and restoration is justified" (p.9).

17. Another article of interest published in the same issue by **Channabasappa (2015)** describes the provisions in the Indian constitution for the conservation of archaeological inheritance. He notes that the Indian constitution mandates all Indian nationals to help and support government in management of inheritance material and heritage artifacts. The constitution provides for punishment following the acts of grave indifference towards negligence and destruction of archaeological monuments or items. The first antiquarian legislation enacted in India the Bengal Regulation xix of 1810 that carried provisions for conservation of monuments. This was followed by the Madras Regulation vii of 1817, the Indian Treasure Trove Act, 1878, the Ancient Monuments Preservation Act, 1904, the Antiquities Export Control Act, 1947 and the Ancient and Historical Monuments and Archaeological Sites and Remains (declaration of national importance) act, 1951. These acts of the government vested the government with power to intervene whenever the public building/monuments/heritage artifacts were under threat of misuse.

18. What are the opportunities and challenges in building a career in manuscript conservation? This is a question that perturbs persons interested in the preservation of the great Indian cultural heritage but worry about their career prospects. This issue is deliberated by **Padmavathi (2015)** who claims that there are several employment opportunities related with conservation. Pointing that conservation is a specialized area requiring knowledge and skills related to authentic appraisal of historical documents and archival material, and that preserving and maintaining documents and historical objects also needs expertise, she lists out several openings of employment in creation and maintenance of computer archives and databases, organizing and

classifying archival records, safeguarding records, filming, digitizing copies and micro filming. She argues there are lots of opportunities for people, who can help, arrange, exhibit, and maintain collections. She notes the role played by the National Archives of India and its significance in capacity building, training for apprentices and internships in conservation sector. She concludes her paper by stressing on the need for an integrated education policy that focuses on inclusion of conservation programs and capacity building trainings.

19. While preventive and curative conservation practices are essential for prolonging the life of manuscripts, another very important point is handling and transportation of manuscripts. **Bhattacharjee (2017)** discusses the guidelines for storing and handling of manuscripts. She points out that the methods used for storage and handling have a direct impact on manuscripts life span which can be prolonged considerably by adopting the best practices. Highlighting various initiatives adopted for cataloguing the Indian manuscripts, she mentions Satkari Mukhopadhyay who made an extensive survey of the cataloguing efforts of manuscripts in India in 2006. She mentions the first cataloguing effort made by a Jain Monk who compiled 'Brihattipanika' where he listed manuscripts of Patan, Cambey and Bharauch in 1383, efforts of Kavindracharya of Varanasi who completed the subject wise catalogue of 2,192 manuscripts between 1629 and 1688, General Charles Stewart's cataloguing of Emperor Tipu Sultan's library collection, the publication of the first volume of the catalogue of manuscripts by the Asiatic Society of Calcutta in 1895-1909, N. Aiyaswami's descriptive cataloguing of entire collection of Vishwa Bharati which was due to the efforts of Rabindranath Tagore who had collected manuscripts from different parts of the world between 1927 and 1932. She also underscores the need for proper handling and storage of manuscripts and warns, if they have not been practiced properly the problem of deterioration and decay of manuscripts ensue.

20. **Ghosh et al (2017)** described the process of seasoning the palm leaf manuscripts particularly in Saraswati Mahal Library, Tamilnadu. Their article dwells on how palm leaves are prepared for writing, which according to them, varies from one region to another. Sometimes the tender leaves are cut, dehydrated under partial or relative darkness, buried in marshy soil and kept wet for 3 months. In some places, five to six months old leaves are collected, their edge ribs removed, separated and then dried in shadow. Thus the leaves are dried in a controlled way and boiled turmeric solution in India. Sometimes they are boiled in milk and gingili oil is applied

for smoothening the surface. In South India, the leaves were kept along with wet rice for seasoning. The article notes that the type of leaves determines how writing is carried out. In 'Tala' leaves, a sharp pointed 'Stylus' was used for carving and lamp black together with gingili oil (Sesamumindicum) is used for engraving the portions. On 'Sritala' leaves only ink is directly used for writing. The paper also describes ancient as well as the modern preservation processes and techniques.

21. Photolam is a private firm in Chennai involved in the conservation activities. A paper hosted on their website titled 'Restoration of traditional heritage for posterity' discusses lamination as a curative conservation method and the advantages and disadvantages of different types of lamination techniques. They describe a new lamination technique devised by them called Photolam system, a reversible type manually operated lamination system **(Renganathan & Ashok, n.d.)**. They claim that their Photolam system is most suitable even for the most brittle documents. Reminding the readers that manuscripts are the priceless heritage of mankind and it is the responsibility of all of us to preserve these manuscripts for posterity, the underscore the need to adopt the right conservation method for preserving our written heritage.

2.2.3 On Digitization and Digital Preservation

With the rapid progress made in the Information and Communication Technologies in the second half of the twentieth century, the mechanisms of preservation of manuscripts for posterity have also changed considerably. In the early 60s of the last century, microfilming was considered as the panacea for all the ills concerning deteriorating manuscripts. But with the advent of OCR enabled scanning equipment, digitization is now acclaimed as the one stop solution for preserving the content of the manuscripts. Digital preservation, even though offers several advantages also has its own inherent limitations. One important advantage of creating the digital surrogates is that the use of original can be restricted, ameliorating the deterioration caused by improper handling. Digitization also enhances access to the manuscript without spatial and temporal limitations.

Efforts towards the digitization of manuscripts in Maharashtra are picking up in the recent times. In the year 2016, the Maharashtra government has flagged off a programme to digitize over 1,00,000 books and 2,500 manuscripts, some of which date back to the 12th century, at the 211-year-old Asiatic Society library in Mumbai

(Hingorani, 2015). Times of India, based on the data from the National Mission for Manuscripts reports that 'close to 40,000 manuscripts from the period 1600 to 1900 AD have been digitized in Pune, and around 1.45 lakh have been documented in the state **(Madaani, 2013)**. The following is the review of research articles published in various research journals about digital preservation and digitization techniques:

22. **Raja & Arora (2004)** in their article titled '*Digitization, Preservation & Management of Rare Materials in Modern Library System*' detailed the general guidelines for creation, planning and preservation of digital collections. Underscoring the need for preservation of rare materials by digitization the authors emphasize how digital copies help in preserving the rare collections. While discussing the advantages of digitization they also describe various components required to be considered for digitizing library materials.

23. **Lalitha (2009)** discusses about the often overlooked cultural heritage material – the photographs which provide valuable testimonials for historians. Emphasizing the need for digitization of cultural and heritage material of India, in her paper titled '*Importance of Digitization of Cultural and Heritage Materials'* she points out that there are no set standards practiced by different digitizing agencies which use different techniques of digitization in different projects at different places. She underscores the need to adhere to the Dublin Core Metadata Standards which describe a list of data elements for photographic collections and recommends best practices for each element.

24. In an article published in the DESIDOC Journal of Library & Information Technology special edition titled 'E Learning' **Mani (2009)** points out three important measures for any static digital image: resolution, pixel bit depth and color. As regards to pixel bit depth, he says can range from 1 bit/pixel for binary (fax type) images to 24 bits per pixel in high quality color images. Wherever large scale digitization programme are being undertaken, he says, it should be a prerequisite to decide definitions and standards for digital preservation and policy for migration. He points to the formulation of a forum–National Digitization Preservation Programme [NDPP] by the Government of India to formulate different programmes and polices for standardizing digitization processes.

25. Digital images help in easy comparison between handwritings and using modern algorithms, assess whether the two documents belong to the same period,

scribe or author. This technique is discussed in the paper titled '*Contour Based Features for the Classification of Ancient Manuscripts'* **(Siddiqi et al., 2010)** in which the authors describe a useful methodology for the classification of ancient handwritten documents based on the writing style. By computing the distance between relevant histograms and taking out a set of features from the contours or the shapes of the handwritten text images, the authors suggest a technique to classify ancient manuscripts whose details of authorship, time period etc., are not very well known.

26. In an article published in the Journal of Emerging Trends in Computing and Information Sciences titled '*Restoration of Degraded Historical Document Image* '**Gangamma et al (2012)** point out that it is possible to enhance the degraded noisy images through proper image processing techniques. They point out that all image processing algorithms designed to improve a degraded image are subjective and hence specific algorithms focus on specific aspects of the image only. To address specific type of problem the suitable algorithms need to be selected. They devised an algorithm by the combination of spatial domain method along with set theory operations to enhance the historical image. This method, they claim eliminates noise, uneven background and enhances the contrast of the script image. They compared the result of their technique with Mean and Gaussian filter and claim their proposed method proved to be better than these methods. The restored images are claimed to have clear uniform background and foreground with enhanced character appearance.

27. Ingole & Shandilya (2011), in their paper *'Image Restoration of Historical Manuscripts'* point out that digital image processing techniques are necessary to improve the legibility of the digital copies of the manuscripts whose quality became poor owing to physical deterioration of the ink and the medium. The deterioration processes often result in uneven background coloration across the image and the darkening of the background which reduces the contrast between the foreground text and the background color of the documents. This problem makes its way into the digital image during the digitization of such manuscripts. They argue that traditional mode of manufacture, effect of ageing and degradation result in uneven background and low contrast and that their proposed methodology performs the improvement in the quality of historical manuscripts. The proposed methodology involves foreground extraction, contrast adjustment, foreground-background segmentation, and

reconstruction of document image with smoothing which they say, results in the enhancement of the quality of manuscripts.

28. Veena (2015) conducted a study on digitization and user behavior towards digital surrogates in her paper titled *'Technical Approaches to Conservation; The Challenges of Digitization of Manuscripts'*. She notes that at the turn of the 21st century, libraries, cultural preservation institutions, and repositories had to adapt to the new way in which visual information was gathered and disseminated. Analogue technologies such as traditional photography and microfilming had been in use for decades which served the needs of both institutions and individuals. This, according to her, has become more affordable since 2003, with the new digital technologies as the storage and distribution of information matured. She lists out HTML editor, XML editor, OCR software, Image editors, Page layout and design software and PDF software as the requirement for digitization.

The following survey of literature depicts the nature of manuscript collections in different repositories in India and abroad. The literature survey is primarily based on the case studies carried out previously by researchers on various manuscript repositories and archival centers.

2.2.4 On Indian Manuscripts and Case Studies:

29. Londhe et al (2011) present an interesting case study of the digitization of manuscripts adopted in the Jayakar Library, University of Pune in India. Jayakar Library, University of Pune in India has a collection of 4,057 manuscripts and 2500 handwritten letters of eminent personalities. The paper explains different steps adopted in the digitization process of the project and the process for creating metadata fields for easy retrieval of manuscripts. They also evaluate the digitization software used in this project and describe different steps of the digitization process. Their paper also describes the process for creating metadata fields for easy retrieval of manuscripts. They maintain that digitization of manuscripts is a difficult process because of the fragility and discoloration (yellowishness) of manuscripts. They also point out that creation of metadata and especially subject headings for manuscripts is difficult and time consuming. They conclude that QuickScan software is good for image capturing and DSpace is good for providing access to digital contents. Their findings of the study shows that subject headings were not available for some of the manuscripts in the descriptive catalogue. The study also shows that there was a lack

of experienced staff, non-availability of OCR for manuscripts, fragility and discoloration (yellowishness) of manuscripts.

30. Digitization of manuscript collection is considered by many librarians and repository heads as the right solution to the problem of providing access to the heritage collection unhesitatingly. But do the users also feel the same level of satisfaction with digital copies? What do researchers and general users feel about digital access to heritage collection? The insights into users opinion is given by **Pandher (2012)** in her survey based research paper titled '*User's Perception and their Feedback about Digitization of Manuscripts and their use in Punjabi University, Patiala & Panjab University, Chandigarh and VVRI, Hoshiarpur'.* She says digitization increases the longevity of manuscripts by creating multiple copies which safeguard the inherent literary value of manuscripts. She points out that digitization impacts the storage of the heritage material and argues that it also affects the user behavior. Her paper provides us a glimpse into the user's behavior about the use of manuscripts, their satisfaction level and impact of age on their use.

31. **Shafi and Lone (2012)** in their paper *'Oriental Manuscripts in India: a Literature Survey'* provide a concise overview of manuscripts present in different Indian libraries and research institution/universities. The paper notes that though manuscripts written in Persian, Arabic, Urdu and other languages are there in different research libraries, university libraries and public libraries in India, most of the manuscripts are written in Sanskrit. They note that university libraries are leading others in preserving these manuscripts, with a few exceptions. According to them, every religious division in India has contributed enormously in collecting and preserving these manuscripts and the contribution of famous kings of Indian history in this regard is also underscored by them. The authors emphasize on the need for steps to be taken at national, regional, and local level by different stakeholders to safeguard the past knowledge and use of information technology to make them easily accessible.

32. Apart from the university libraries, public libraries also hold very good collection of manuscripts. Dr. U.V. Swaminathan Iyer Library, located in Chennai is one such library in India. The paper titled '*Manuscripts Collection Development in Mahamahopadhyaya Dr. U.V. Swaminathan Iyer Library: a Case Study'* is authored by **Baskar & Babu (2013).** As part of their research, they studied the process of collection development of manuscripts and different aspects of manuscript management like acquisition policy, language and availability, quantity of

manuscripts, etc. The authors contend that manuscripts provide reliable records for tracing the cultural, social, political and economic history of the people of Tamil speaking regions across different parts of the globe. This paper also recommends reorganizing and reforming the manuscript collection in the digital environment and underscores the necessity of Web-OPAC for providing online information about the manuscripts available in the library.

33. Mahawar and Kuriya (2013) studied the status and management of collection, services, staff strength, budget and policy for the conservation and preservation of the oriental collection in their paper titled *'Conservation and Preservation of Manuscripts in the Saulat Public Library Rampur, Uttar Pradesh: a Survey and Proposal for their Modernization'*. The library is unique in its holdings of more than 25 thousand Urdu publications and several hundred oriental manuscripts in Arabic, Persian and Urdu. Their study revealed many shortcomings such as lack of technical staffs such as Curator, Restorer and Conservator, lack of modern facilities and equipments such as air condition, photocopier, fumigation chamber, etc., no public funding and lack of national level collaboration. Their study also revealed that the library's invaluable collection is suffering from different types of deteriorations such as holes, old repair, yellowing, darkening of papers, termites and silverfish etc. They also point out lack of awareness about the collection. The authors recommend use of new ICT tools and techniques for modernization.

34. Sri Pratap Singh (SPS) library is a renowned library for its collection of oriental manuscripts in Srinagar in the Union territory of Jammu & Kashmir. **Khan (2013)** in his research paper titled *'Oriental manuscripts in Shri Pratap Singh (SPS) library Srinagar, Kashmir (India)'* gives a general account of the manuscript treasures contained therein. In this research paper, the author informs us that the library holds 60,000 documents which also include manuscripts in oriental languages received by the library through donations and gifts apart from purchase. He also provides a general introduction on the present condition of rare collections present in the library. The author says the journey from birch bark to the handmade paper in Kashmir can be traced by having an overview on the oriental manuscript collection in the SPS Library. A host of writing material ranging from the bark of birch tree (Bhoj Patra or Burza) and cloth to fine Kashmiri handmade paper, known as 'koshur kagaz' are present in the library. The author notes that most of the manuscripts in the library are complete (without missing pages).

35. **Rattan (2013)** in his paper titled *'Role of Panjab Digital Library in Digitizing Manuscripts: a Case Study'* describes the initiatives taken up by the Punjab Digital Library (PDL) in locating, preserving and digitizing the manuscripts. PDL project was initiated in the year 2003 with its motto 'Revealing the Invisible Heritage of Punjab to find, locate, preserve and digitize the lost or disappearing heritage of Punjab region due to environment, ignorance or destruction. It aims to provide access to the scattered or concealed resources of information of Punjab. PDL stands testimony to the role non-profit non-governmental Organization can play even with a meager budget in preserving the cultural heritage of a nation. According to the study up to 4500 manuscripts have been digitized and a complete metadata is provided with each digitized manuscripts.

36. Maulana Azad Library of the Aligarh Muslim University is the largest library system of India and second largest of Asia. Apart from regular collection of books and periodicals, the library has about 16,000 rare manuscripts, which the university began to digitize. **Hasan et al (2016)** describe in their paper '*Digital Preservation of Rare Books & Manuscripts: A Case Study of Aligarh Muslim University'* the steps taken by the University towards conservation and preservation of the rare documents for the future use through digitization. The library developed its own two conservation and preservations labs where the conservation and restoration of rare documents is carried out. The authors point out that digital preservation is a power tool in the field of preservation of manuscripts. The minutely describe the whole process of how the activity is carried out. They argue against outsourcing the digitization as they contend, the contractor undertaking the project is unlikely to have the love and care for the delicate manuscripts as a librarian would extend towards them. The paper describes the hardware and software put to use for digitization. The paper informs that out of the 16000 rare manuscript collection, the project has successfully digitized about 7000 manuscripts.

37. Another important library in India housing a wealth of rare oriental manuscript collection is the Khuda Baksh Public Library situated in Patna, Bihar. The Library unique in respect of having the most ancient and medieval collections of manuscripts. **Mahmood & Khan (2017)** discussed about the digital preservation of manuscripts, their importance, preservation requirements, preservation of knowledge in different formats and initiatives taken in this regard in Khuda Baksh Oriental Public Library.

The study while detailing the collection also examines the digital preservation methods used and describes the advantages of digital preservation of manuscripts.

2.2.5 On Heritage Collection Abroad

How are other countries faring when it comes to preservation of their heritage collections? This is a question that naturally comes up for any researcher.

38. Ming (1993) in his research article *'Malay Manuscripts: Materials and Problems of Conservation'* deliberates on various aspects of manuscripts starting from collection development to security and accessibility. He says that manuscripts are not acquired consciously by most of the repositories, but are only opportunistically acquired nowadays. The collection development of manuscripts in an archive or repository is done by means of purchase, gifts, exchange or transfer from the old collection. The job of the repository is now to manage the acquired manuscripts to make it easily accessible to the users. However, manuscripts being rare and valuable and also owing to the diverse nature of their formats compared to conventional materials, they are kept in special rooms for protection. The access to the manuscripts to the users is ensured by means of classification, cataloguing and preservation. He says if we do not manage this wealth properly, we may lose whatever has still survived.

39. Graham (2003) who oversaw the work of Heritage Trust Project as Heritage Manager at Auckland city libraries in New Zealand gives a brief account of the rich collection there. He accentuates the support he and his team received from the community and praises their dedication for the preservation of heritage material in his paper *"Electronic Access to and the Preservation of Heritage Materials'.* This case study provides an overview of how preservation and digitization was carried out to preserve archival collections. The author stresses the need for collective action not just from the heritage team, but also from other sections of the library that provided technical knowledge, expertise in cataloguing. He mentions the noteworthy contribution his team received from Information Technology specialists, policy makers, fund planners, subject specialists and others.

40. In the paper *'Identification of Physical Problems of Major Palm Leaf Manuscripts Collections in Sri Lanka'* **Alhakoon (2006)** carried out a survey of palm-leaf manuscripts in Sri Lanka in order to find out flaws in maintenance, preservation and conservation programmes. His survey reveals that most of the shortcomings in the

preservation of manuscripts were due to lack of expertise, lack of knowledge in modern conservation techniques and about the conditions to be maintained in the storage area and insufficient equipment for environmental control in the stack areas of repositories. Owing to these, he points out that no modern conservation techniques are applied for the conservation of palm leaf manuscripts. He concludes with a recommendation for the establishment of conservation units, clear formulation of preservation and conservation policies and also digitization of collections.

41. Despite the fact that India's rich manuscript heritage was repeatedly destroyed by the invaders for several centuries, who were blinded by their faith, a good number of manuscripts, though miniscule in comparison to what was originally extant, still survive in the university libraries of Pakistan and Bangladesh. The Punjab University Library (Lahore) has the richest collection of oriental manuscripts and rare books in Pakistan. '*Oriental collection in the Punjab University Library: A Case Study'* by **Ameen & Shafique (2009)** underscores the need to preserve this treasure of knowledge for the future generations. They recommend adoption of user-centric activities, underscoring the need to take really good care of the heritage material. The study also suggests measures for strengthening the existing facilities and services.

42. The Middle East which was the cradle for Judaism, Christianity and Islam, and many smaller faiths such as Bahai, Zoroastrianism, etc., is a treasure trove for ancient manuscripts preserved in the form of scrolls and codices. In the paper titled *'Collecting Medieval Manuscripts'* **Slowik (2009)** explores the methodologies and strategies adopted for the collection of medieval manuscripts by various organizations. The author argues that building collection in an archive is fraught with several challenges relating to an object's identity, fragility, scarcity, and historical context, competition among institutions, cost of acquisition, etc. The author points out that many institutions are now digitizing their manuscript collections for preserving them to posterity. The study underscores the need for the institutions to collaborate in acquisition of manuscripts belonging to the medieval period.

43. **Warraich and Tahira (2010)** in their paper *'Manuscript Collection in the Punjab University Library: Assessing Management Issues'* is a paper that describes the conservation and preservation activities carried out by the Punjab University Library in Pakistan of their rare manuscript collection. The library has the largest collection of multilingual and multi-format manuscripts in Pakistan, consisting of more than twenty-two thousand items, some of which are written on palm leaves. The

library provides catalogue listing of their collection in Arabic, Sanskrit, Punjabi, Persian, Urdu and Sanskrit. The authors obtained their data about the collection and preservation activities from a focus group of relevant library staff and describe the nature of collection, acquisition process, organization, methods employed for the conservation, preservation and digitization of their rare collection. The paper notes that the library staff follows modern techniques to preserve and digitize manuscripts written in different languages and save digital content on CDs but they felt difficulty to handle manuscripts in Sanskrit and Hindi language. The paper concludes with an emphasis on the need for better planning in the preservation strategies and maintenance of this rare collection.

44. The paper titled *'Rare Collection about Kashmir: Survey and Documentation'* **(Jan et al., 2012)** explores the institutions and libraries across the world that have manuscripts, books and images on Kashmir prior to 1920. The paper focuses on compiling metadata of the available collection and aims to compile data based on subject, chronology and country wise collection strength. The paper reveals that the most of the rare books are on travelogue, followed by Shaivism. The study also reveals that the United States of America has the largest collection followed by Great Britain, Canada, and Australia with the lowest number of rare book collection coming from Thailand. The study points out that despite mass of literature about Kashmir being preserved by institutions, museums and libraries at national and international level, not many noteworthy efforts have been made to disseminate information about Kashmir collection spread worldwide.

45. **Nurdin (2012)** in his paper *'The manuscript collection of the Aceh museum'* discusses the scope and development of manuscript collection of Aceh museum, located in the Indonesian province of Aceh. This museum contains several thousand manuscripts written in Malay and Acehnese, with a smaller number written in Arabic and a very few in Javanese language. The manuscript collection includes a wide variety of subjects, ranging from literature to Islamic sciences. The take away from this paper is the measures taken by the Aceh Museum to sensitize and build awareness among public about the value and significance of importance of manuscripts as a tangible gift of the great intellectual heritage of Aceh and as a cultural property and a source of national pride. Besides that, the author also discusses the steps taken by museum to preserve and conserve the manuscripts by trained conservation and restoration technical staff. He describes vividly how team of officials from the Aceh

Museum travelled from one place to another in order to identify surviving manuscripts held by individuals and in private institutions. This greatly helped, the author notes, in raising the awareness of manuscript owners to realize the value of their manuscripts.

46. Another paper that describes the manuscript collection in Pakistan is the one authored by **Qutab (2012)** which reveals the state of affairs prevalent in various libraries and institutions there. This paper is basically a documentary study based on the review of literature based on bibliographies, surveys, and articles. The paper brings forth quite vividly, how the efforts by government and non-governmental professional agencies in manuscripts collection and preservation fail miserably in Pakistan. The author stresses the need for awareness campaigns to be carried out at national level that educates and sensitizes the general public about the importance of conserving the manuscripts. He recommends initiation of special efforts for the identification of all manuscripts, especially those hidden in personal holdings, development of a national bibliographical database of manuscripts, etc. The paper provides factual data on manuscripts in respect of total number of collections, languages, institutional/personal holdings, locations, age and time period, writing styles and materials, etc.

47. Katriina Similä**,** Project Manager, ICCROM, Roma, Italy, in her research paper titled *'CollAsia 2010: Conserving Cultural Heritage Collections in Southeast Asia'* points out that when it comes to conserving museum, library and archive collections, the challenges faced by countries at the regional and/or sub-regional level are common **(Simila, 2013)**. Recognizing the dramatic growth in the museum field in Southeast Asia, she lists out the challenges faced by the centers working in the field of manuscript conserving and archiving: continuous expansion of collections in size and variety, lack of sufficient training and professional development for staff of heritage institutions, no systematic documentation of traditional skills and techniques, insufficient knowledge-sharing and professional networking, limited and sporadic collaboration at the regional level low levels of public awareness and participation. The paper describes the purpose of establishing CollAsia2010 as a joint initiative by ICCROM, of Rome, Italy, and SPAFA (SEAMEO Regional Center for Archaeology and Fine Arts), of Bangkok, Thailand to improve conservation conditions of heritage collections across the region.

48. The paper titled '*The Management and Use of Arabic/Islamic Manuscripts in the Nigerian Universities: A Study of Kenneth Dike Library of University of Ibadan'* **(Yaqub et al., 2013)** provides the sorry state of affairs in Nigerian Universities when it comes to the condition of the historically significant collection, its management, and the use of manuscripts. It lists out all those shortcomings that plague the heritage collection centers in developing countries where 1budgetary allocations are meager – poor organization ill-structured, lacking seating space, poor preservation and conservation facilities for the manuscripts, lack of professionally trained personnel and experts to manage the manuscripts. The paper concludes with a suggestion to put to greater use ICT in the libraries and underscores the need for digitization of manuscripts.

49. **Russo (2017)** conducts a case study in manuscript collections of Timbuktu and other Malian cities and describes the problems and challenges faced in managing the special collection repositories. The Malian projects, she points out, provide a good opportunity owing to the number of activities undertaken there. She describes the main activities and the way the work is organized and highlights the issue of access and scholar needs. The paper also emphasized on the standards and guidelines for preservation, access and use of manuscripts and special collections in the light of current librarianship trends. She attempts to highlight the potential weaknesses of special collections libraries when they are given new missions. She reminds the readers of Lyon's declaration on libraries and questions whether special collection libraries are able to live up to it.

2.2.6 On Efforts by Governmental Agencies

The following review is on the research papers that focus on the role of governmental agencies in the conservation of Indian heritage.

50. *'Digital Preservation of Cultural Heritage Resources and Manuscripts: an Indian Government Initiative'* is a research paper authored by **Singh (2012)**. It highlights the need for digital preservation of cultural heritage and manuscripts and the need to formulate policies and strategies at the national level. It describes how the Ministry of Culture established Indira Gandhi National Center for Arts (IGNCA), National Mission for Manuscripts (NMM) and Kalasampada that have the responsibility of digitization of cultural heritage and manuscripts. The paper describes creation of Kritisampada a national database of manuscripts by NMM which

essentially is a network of partner institutions at various levels involved in manuscript documentation and preservation throughout the country.

51. Another paper that examines the efforts taken by the Indian government for the digital preservation is the one by **Sahoo, et al (2013)** titled '*Indian Manuscript Heritage and the Role of National Mission for Manuscripts'.* The paper discusses the role played by the National Mission for Manuscripts (NMM) in the documentation, compilation of catalogues, preservation, conservation and digitization of manuscripts. Their paper also describes the outreach programmes and publication activities conducted by the Mission and outlines the activities rendered by NMM with the establishment of Manuscript Conservation Centers (MRCs) and Manuscript Conservation Centers (MCCs) across the country.

52. **Prof. Dipti Tripathi (2013)**, the then Director of National Mission for Manuscripts states that: 'India has got, at a reasonable estimate, around 10 million manuscripts which is perhaps the single largest number in any country in the world. This number does not include Indian manuscripts in the custody of institutions outside India. The manuscripts heritage of this country represents the cumulative knowledge, experience and practices of the people for almost 5000 years. The present available manuscript wealth is only a fraction of what must have been there once upon a time. A major portion of this heritage has been lost due to ravages of time, natural calamities and destruction by foreign invaders. Harsh tropical weather has also contributed to the destruction of this national heritage' (p.11).

53. **Narang & Singh (2014)** in their paper *'Preservation and Conservation of Manuscripts and Rare Documents in National Archives of India and National Mission for Manuscripts: problems and prospects'* elucidate the role played by the National Archives of India (NAI) and National Mission for Manuscripts (NMM) in conserving the heritage collection of India enshrined in the form of manuscripts and documents. The paper provides an overview of the factors that cause deterioration of manuscripts and the preventive measure to be taken. The paper also describes the conservation activities carried out by the National Archives of India and also describes the 13 Manuscript Resource Centers (MRCs) established by the National Mission for Manuscripts.

54. *'A Study of Government Initiatives of Digitizing Manuscripts in Punjab (India)'* describes the initiatives taken by Punjab Government for preserving manuscripts through digitization **(Rattan & Singh, 2014)**. The authors point out that

digitization facilitates easy access of the rare resources without any space and time restrictions. The authors provide detailed information on the types, material and size of manuscripts available at the Punjab State Archives Department, Punjab Languages Department, Patiala Punjab and Directorate of Cultural Affairs, Archaeology and Museums, Sheesh Mahal Museum, Patiala, Maharaja Ranjit Singh Museum, Amritsar and the preservation activities carried out by these government bodies.

55. Suma (2015) in her article titled 'The Treasures of Knowledge - Manuscript Libraries in India' lists out several initiatives taken across the country particularly in the digital preservation of cultural heritage of India. She makes a very apt statement that 'a large number of manuscripts are also housed in University libraries in India, to put it very plainly, to take care of the manuscripts is what we are paid for' (p.49). She describes the ongoing research on indigenous methods of conservation in Regional Conservation Laboratory, Mysore, a regional branch of the National Research Laboratory for Conservation of Cultural Property(NRLC), Lucknow which will throw some light on the merits and demerits of various Indigenous practices followed in various parts of India. She describes various digitization projects such as the pilot project for digitization of rare manuscripts by National Archives of India, in 2001. She also makes reference to the digitization program of National Library of India titled 'Down the Memory Lane', Virsa project, which is the Digital Sikh Reference Library under which one hundred fifty manuscripts of Sri Guru Granth Sahib and other manuscripts available in the Government Museum and Art Gallery, Chandigarh and Kurukshetra University are digitized, etc.

56. Bakhshi (2016) gives an account of IGNCA's efforts in cultural preservation in her article titled *'Digitization and Digital Preservation of Cultural Heritage in India with Special Reference to IGNCA, New Delhi'.* The IGNCA has a huge number of cultural heritage resources such as photographs, photo-negatives, photographic slides, digital images, motion picture films, LP records, audio spools, audio and video tapes, microfilms, microfiches, manuscripts, digital images, digital audio and video files. The center has been able to digitize a large part of its collection with a view to cause improvements in preservation and access. The Center created a digital library named as KALASAMPADA that contains heritage resources which are accessible through the internet. She also lists out digital initiatives by other countries like National Digital Library of China, PORTA portal of Japan, National Digital Heritage Archive of National Library of New Zealand.

2.3 Review of Conference Proceedings

1. The INFLIBNET Center, Gandhinagar, has been regularly organizing PLANNER and CALIBER conventions to promote networking among library professionals and exchange of innovative activities. In the second convention of PLANNER, **Kumar & Shah (2004)** presented a paper that emphasized on the need to conserve and digitally preserve manuscripts. Remembering how the manuscript wealth of India has been repeatedly destroyed by the foreign invaders, and pointing out how Bakhtiyar Khalji and his soldiers destroyed Nalanda university library completely and used the manuscripts for boiling water, the authors express the hope that no more Khalji is born in modern times. They describe the digital preservation efforts carried at Scindia Oriental Research Institute (SORI) and applaud it as one of the front runners in the preservation process.

2. **Choukhande and Dange (2005)** describe the *'Preservation and Digitization of Rare Collection of Dr. Panjabrao Deshmukh Smruti Sangrahalay, Amravati'.* They point out that often special collection items are fragile, oversized and so are difficult to handle. They also need particular care, and as unique items they are irreplaceable. Hence it is a good idea, they argue, to replace their use digital surrogates. This will help in their preservation. They also point out that it is easier and faster to look at manuscripts digitally than to browse actual manuscripts, which must be handled slowly and carefully to avoid deterioration. The authors describe four steps involved in the process of digitization: scanning, indexing, storage and retrieval and also point out how the issues of copyrights pose a major hurdle during the process of copying, accessing, archiving and preservation. The authors end their paper with a note that digital preservation is a good option in combating the dangers to the intellectual and physical legacy of a community and all the members of that community have to take a pledge for their preservation.

3. **Ramana (2005)** in his paper entitled *'Digital Preservation of Indian Manuscripts: an Overview'* presents a general idea of Digitization of manuscripts and preservation techniques currently in use in India. The author highlights the benefits of digitization in terms of preservation, dissemination of information, transcending the original, collection management and new revenue streams. The role of the National Library of India in Digital Preservation of Indian Manuscripts is also highlighted. The paper also describes the role of Manuscript Resource Centers and Manuscript

Conservation Centers of India. While stressing the need for digital preservation, this paper highlights a new method of preservation developed by the National Institute of Advanced Studies (NIAS) called NiDAC, to share the rare manuscripts via the Internet or CDs, for educational and research purposes. This method uses DV video format which simply records everything in binary code onto a mini DV tape to digitize each page as a computer graphic instead of using a scanner. This method is superior to the DV digitization and is suitable for extended field trips to archives, if a laptop or a computer with adequate storage is available. The author appreciates the DV digitizing method as suitable to carry out work in remote areas for extended durations where there is no computer access and uncertainty of power supply etc. The NiDAC procedure allows in house copying of acid paper books such as yellowed and crumbled books.

4. Ramponi et al (2005) describe a new technology in their paper *'Digital Automated Restoration of Manuscripts and Antique Printed Books'* published in the Proceedings of EVA 2005: Electronic Imaging and the Visual Arts. This newly developed technology, according to the authors, is useful for automated restoration and imaging of antique paper affected by foxing and by yellowing deterioration process. Highlighting the advantages of their technique, the authors state that the conventional restoration of such deteriorated objects is both expensive and hard to carry out by non-specialized personnel, this new method ensures fast and cheap results, and can be used also by non-qualified operators. The researcher described the algorithms for the automated restoration of the foxing defects and of the yellowing of the paper in technical section of this paper which involve several steps such as foxing detection, detail image extraction, processing of foxed areas, color filtering, tonal adjustments, thresholding, color corrections etc.

5. Chopra & Narang (2007) in their paper *'Digital Preservation of Archives and Manuscripts: An Indian Scenario'* point out that manuscripts become fragile and brittle with the time and that lamination and encapsulation cannot be regarded as permanent solutions. India with over five million manuscripts written on various media requires urgent digital preservation. Highlighting the Open Archival Information System (OAIS) recommended as the international standard for archives, the authors point out that the advent of information technology and telecommunication has changed the picture of preservation all over the world. The authors recommend that the courses offered by the National Archives of India are to

be revised with the inclusion of topics such as 'digital preservation' 'digital documents', 'digitization of manuscripts', 'storage techniques' 'online accessibility', etc., are to be introduced at regional, state and national levels. The authors describe the roles played by UNESCO, NAI and NMM in digitization of manuscripts. They also recommend revision of the terms and conditions in the Memorandum of Understanding signed by the NMM with centers involved in conservation to make the activity effective.

6. Osmania University in Hyderabad is one of the universities established before independence in India. It houses some very remarkable manuscripts of the Nizam era. **Ahmed (2009)** presented a paper titled '*Digitization as a Means of Preservation of Manuscripts: Case Study of Osmania University Library'* during the 7th International CALIBER organized annually by the INFLIBNET. In his paper he presents digitization as an effective means for the manuscript preservation and gives an overview of the hardware and software used in the Osmania University Library for digitization. As regards to the hardware tools which are put to use for digitization include computers, scanners, digital camera. Software include HTML and XML editors, OCR and image editing and PDF software, etc. The author also explains a detailed overview of digitization process by describing the workflow of digitization work. He views digitization as a means to enhance the access to the manuscripts. The author describes various technologies that facilitate digitization such as scanning and storage technologies.

7. Another paper that describes the digital preservation activities carried out in an Indian university library pertains to the efforts of Panjab University Library, Chandigarh. **Chhatwal et al (2009)** in their paper elaborate on the steps adopted by the university for preserving the manuscripts through digitization. The authors make an exaggerated statement when they maintain that the only way out for preservation and access to manuscripts is digitization. The paper emphasizes on the need for spelling out proper digitization policy and sets criteria for selecting the documents for digitization. As regards to the selection policy the criteria underscored by the authors are intellectual implication, distinctiveness, relevance and demands of the users. The paper also underscores creation of proper metadata for manuscripts written in diverse languages and scripts to facilitate the user know the content of the material beforehand. The paper also provides a good description of the infrastructure required for digitization.

8. Gaur and Chakraborty (2009) explore the glorious past of the Indian culture embodied in the manuscripts in their paper titled '*Preservation and Access to Indian Manuscripts: A Knowledge Base of Indian Cultural Heritage Resources for Academic Libraries".* With more than five million manuscripts the authors point out, India is the leading repository of manuscript assets in the world. The authors explain the need for digitization of manuscripts. According to them, digitization helps in faster access, improved services, helps in archiving and protect the originality of the object/ document etc, reduce the handling and use of fragile or heavily used original material and create a 'back up' copy for endangered material such as brittle books or documents, enables resource sharing and more importantly contributes in the preservation of this rich heritage. The paper while detailing the modern concept of preservation and access also describes the institutional and individual efforts made in the field of preservation and access in India. They applaud the initiatives taken by IGNCA and National Mission for Manuscripts (NMM). The authors point out to one of the surveys made by Dr. S. C. Biswas and Mr. M. K. Prajapati on behalf of INTACH during 1988-90 and the estimation of manuscript wealth of India made based on it.

9. The efforts to preserve the rare manuscript heritage of North East, particularly of Assam are described by **Mazumdar (2009)** in the paper titled '*Digital Preservation of Rare Manuscripts in Assam'.* The author, pointing out that manuscripts are the primary sources of historic information says that they are also subject to the deterioration with time owing to the Law of Nature. He bats for digital preservation of manuscripts as it protects them from loss, theft and decay. The paper highlights some of the initiatives taken in Assam for the digital preservation of manuscripts. The author lists out some of the major manuscript repositories in Assam that include Satras and Namghars and institutions like KKH Library of Gauhati University, Kamrup Anusandhan Samiti, Department of History &Antiquarian Studies, Guwahati. The author thinks that with the advancements in Information Technology, the digital preservation of manuscripts is proving to be the best way to provide global access to manuscripts.

10. Ing et al (2011) present the practices necessary to inculcate the tendency for the preservation of manuscripts in the general public in their paper titled '*Preservation of Sarawak Manuscript'.* Sarawak is one of the states in Malaysia, known for its rich culture owing to its diverse population of multi ethnic background.

The study explores if there is any agency responsible in collecting, managing, preserving and storing manuscripts in Sarawak, what are the methods used to ensure the safety and maintain the historical value of the manuscripts and understand the strengths and challenges of the organizations involved in preserving manuscripts. The findings of the study show that there are indeed a few organizations that are working towards preservation of manuscripts and that these organizations faced the problem of storage capacity, lack of professionals, problem of transcription and lack of equipments. The authors express their anguish that manuscripts are present everywhere across Sarawak but the general laity does not know the importance of manuscripts and express a dire need to educate the society towards the historical value of manuscripts.

11. Seifi (2011) gives an overview of digital preservation of manuscripts through digitization in her paper '*Digitization and Digital Preservation of Manuscripts and Access in Organization of Libraries, Museums and Documents Center of Astan Quds Razavi Library of Iran'* in the 8th international CALIBER held at Goa. The author argues that no library in the modern times can think of surviving without digitization, particularly when it comes to their manuscripts and other rare collections. The digitization enables easy access as well as preservation of manuscripts. The author describes the procedure adopted for digitization in the Astan Quds Razavi Library of Iran including the technical specifications of software and hardware used in the digitization.

12. Singh & Parabhoi (2016) describe a case study carried out by them on the digitization of monographs and rare books by the Indian Institute of Advanced Studies (IIAS) located at Shimla, Himachal Pradesh. The IIAS is a premier institution that has provided conducive milieu to the intelligentsia of India who produced some of the very great works in the form of monographs. The library of IIAS houses some of the very rare books. The paper lists out the objectives of digitization, technological issues, and challenges experienced during the digitization process. The paper describes how Indian Institute of Advanced Study has been digitizing monographs, rare books and images contained in its library and provides an overview of techniques and equipments put to use in the process.

2.4 Review of Books and Book Sections

1. Langwell (1957) published a book titled 'The conservation of books and documents' which gives an account of the early history of paper making. It also

describes the modern day paper making process and various causes of damage to paper due to acid content, atmospheric pollution and several other factors. The book also deliberates on inks, adhesives and binding materials used in the making of books.

2. **Sutton (1967)** gives a general glimpse of the India Office Library's European and oriental books, manuscripts, drawings and other resources. The India Office Records are the archives of the administration in London of the East India Company and the pre-1947 government of India. The official archives of the India Office Records are complemented by deposits of private papers relating to the British experiences in India. The Library consists of public records comprising the archives of the East India Company (1600-1858) spread out in 14 kilometers of shelves of volumes, files and boxes of papers, together with 70,000 volumes of official publications and 105,000 manuscript and printed maps, etc. The book classifies resources of the Indian Office Library into four main categories: printed books, manuscripts, drawings, prints and photographs. It also highlights miscellaneous properties of the library such as coins, lantern slides, textile samples, epigraphical material and copper-plate inscriptions. The author has also given an account of microfilming of oriental manuscripts undertaken since 1950 as a preservation measure.

3. Conservation of library materials: A Manual and Bibliography on the Care, Repair, and Restoration of Library Materials **(Cunha & Cunha, 1971)** is a classic that highlights various dimension of conservation. Considered as a practical guide for librarians, archivists, curators and conservators, the book argues that preservation and conservation of library materials involves several aspects and is extremely complicated. The authors say there is still a lot to learn in this aspect.

4. In 1969, UNESCO together with the International Council on Archives decided to publish a manual on the conservation and restoration of archive materials particularly focusing on the specific problems encountered in regions with unfavorable climatic conditions. The task was entrusted to Shri. Yash Pal Kathpalia, Scientific Officer at the National Archives of India, New Delhi, who authored the much acclaimed book 'Conservation and Restoration of Archive Materials'. In the preface **Kathpalia (1973)** says 'The historical material held in archives forms part of the cultural heritage of mankind, and the conservation of such holdings is of vital importance'. Giving a list of media on which human knowledge has been enshrined since time immemorial, he says 'from earliest times up to the present day, the

substances used as vehicles for writing have been numerous. Whatever was convenient and available was used for the purpose -papyrus, cloth, wood, palm leaves, parchment, vellum and paper, until the latter replaced all the other materials'.

5. Another interesting book published in the same year that describes the nature of writing materials, various enemies of library collection and their preventive and curative measures is one authored by **Mukherjee (1973).** The book deliberates on history of preservation of knowledge in various forms since ancient times. The author also offers his recommendations for maintaining conditions conducive for archiving and storing library materials in temperate climates. The book also describes various methods adoptable for repair and general maintenance of library resources.

6. 'Art and Science of Book Preservation' is a classic authored by **Mehta (1976)** that describes in detail the techniques to be adopted for the preservation of library materials particularly in the context of the environmental conditions prevalent in India. The book looks at the process of preservation, as the title rightly suggests both as an art that requires delicate and aesthetic handling and also as a science that explains the scientific process behind various preservative procedures.

7. In the twenty third volume of the Encyclopedia of Library and Information Science **Banks (1978)** argues that the birth of preservation took place simultaneously along with the birth of written records. But as the time went on, the material used for the creation of documents diversified and became more complex. This created several hitherto unknown preservation problems that need to be addressed with the passage of time. The author describes several factors responsible for damage and deterioration of library materials and gives an account of suitable preservation methods. The author emphasizes on the need to educate librarians and archivists on preservation of materials in their custody. The entry lists remedial measures to be adopted for specific individual problems.

8. The American Library Association published a handbook titled 'The Library Disaster Preparedness Handbook' in 1986. In the section titled *'Preservation and Conservation'* books are compared with food items as both of them need cold, dark storage environment to contain deterioration **(Morris, 1986)**. Describing books as the vehicles of communications the author lists out several factors responsible for the damage including air quality, lighting, pests and human intervention. The book reaffirms the need to educating library staff and students who handle the books and underscores the need for safe handling practices.

9. Another publication by the American Library Association describes '*preservation and conservation strategies for libraries and archives*' **(Balloffet et al., 2005)**. The authors argue in favor of adopting appropriate conservation and repair strategies by library staff to mend materials that have missing pages, disconnected covers, or other deterioration related problems. The first section of the book dwells on effect of environment, need for disaster planning, and similar matters that have a bearing on the well being of the collections. The next section of the book describes setting up a conservation work area including description of useful equipment, as well as practical working tips. Designing storage furniture and containers, optimal collection preservation techniques rehousing and directions for making simple enclosures are covered in the third section. Section four and five provide guidance for making simple paper and book repairs. The sixth section of the book describes safe ways to mount a small exhibit of rare materials. The book provides easy to learn step-by-step instructions to repair and conserve books and documents. Appendices include care of photographs as well as suppliers lists and additional resources. The book focuses on steps to extend the shelf life of collections by maintaining proper environment and housekeeping conditions, and how to recover after disasters - fire, flood, mold, etc. The book documents field-tested methods and recommends optimal storage for fragile or odd-sized pieces.

10. In the book titled *'Creating Digital Collections: A Practical Guide'* the authors describe what and why of digital collections. The book provides practical guide to planning and managing digitization projects with practical case studies. The criteria for selecting material for digitization are discussed in the third chapter. Meta data strategy and standards, best practices for scanning, creating user interfaces for digital collections, complete digitization process and workflow management, selecting software and hardware, documentation and its importance, knowledge and skills required for creating digital collections are presented in the subsequent chapters **(Zhang & Gourley, 2008)**.

11. Assamese manuscripts are known for their beautiful miniature paintings. Conservation such manuscripts is described by **Boruah (2010)**. The author informs that the Harshacharita of Banabhatta throws light on the tradition of painting miniature pictures on the manuscripts in Assam. He informs that calligraphic elegance was considered to be important in the ancient Assamese manuscripts. The author describes several important characteristics of the Assamese paintings belonging to the

seventeenth century. The article contains several photographs illustrating very rare shapes and designs and various media used for manuscripts.

12. The National Mission for Manuscripts published several valuable books under the series Samraksika concerning conservation techniques. In one such publication titled *'Rare Support Material for Manuscripts and their Conservation'* several articles concerning the technique of conservation of manuscripts written on various media are described. In the book, editor KK Gupta authored several articles on conservation of manuscripts on palm leaves, on metals particularly on copper plates, on Sanchipat, on ivory and on parchment **(Gupta, 2010)**.

13. **Jeyaraj (2010)** points out that when museum objects are stored in vaults and are out of sight, we presume that they are safe and relax our conservation vigilance. Pointing out that the basic principle of storage is to keep the objects in a physically secured environment and yet permit their ready access for inspection, the author provides valuable information on storage of manuscripts and lists various storage devices such as drawers and cabinets, sliding screens, compaction devices vaults, etc., for stacking, shelving. The author also lists out some useful conservation guidelines.

14. The technique of conservation of Kaditas is described by **Kharbade (2010).** A *Kadita* or *Kadata* is a long piece of cloth covered with a thick paste of ground tamarind seeds and charcoal powder, making it look like a thick black paper. It is folded in the form of book running into two to three hundred pages but opens like a roll. White soap stone pencil is used for writing on the *Kaditas.* The Shringeri Matha in Karnataka has such about 800 Kaditas describing political, administrative, religious, economic and social conditions prevalent in Shringeri and other parts of Karnataka in the nineteenth century. The author, having examined them in the laboratory for the purpose of their conservation found that a few layers of the same or different cloth were used in making these *Kaditas.* They were heavily infested with mould and fungi and termite tunnels were also found. The author describes use of methyl alcohol and water (80:20) for cleaning them and refilling the holes with a freshly prepared tamarind seed paste.

15. The book section titled *'Studies on Methods of Lamination of Birch Bark Manuscripts'* provides an insightful information on the studies conducted on combination of various adhesives and supporting material on birch bark manuscripts **(Suryawanshi, 2010)**. In the opening paragraphs, the author points out that use of cellulose acetate foils and Japanese tissue paper or thin polythene as in the case of

paper is not effective on birch bark manuscripts. Hence the author conducted experimental studies on the suitability of adhesives such as Carboxyl Methyl Cellulose (CMC), Methyl Cellulose (MC), Maida, Dextrin, mixture of CMS and Maida and CMC with Dextrin. In respect of the supporting material the study is carried out on Nepalese handmade paper, Japanese tissue paper, Indian tissue paper, Chiffon and their permutations and combinations. The author studied the folding endurance and brightness of the birch bark manuscripts after laminating them with the above mentioned supporting material and use of various adhesives and concludes that chiffon and Indian tissue and Japanese tissue are found suitable as supporting material and CMC and MC as the most suitable adhesives. The study found that cellulose acetate film and polythene sheets are unsuitable for lamination of birch bark manuscripts owing to their non-fibrous nature and poor binding property.

16. The book titled 'Engaging students with archival and digital resources' underscores the need to design suitable course curriculum, workshops and practical sessions to introduce students to library and archival resources. The book mainly focuses on American and Canadian archival centers and gives detailed case studies. Authors **Cotton and Sharron (2011)** provide librarians and archivists with ideas to develop robust workshop programs that connect students with archival and digital collections.

17. In the book titled '*Records management for museums and galleries: An Introduction'* authors **Brunskill and Demb (2012)** provide a comprehensive overview of records management work in museum and gallery settings by record managers. Starting their discussion with fundamentals such as what is a record, difference between archives and records, basic record management concepts, the authors go on to explain record management requirements, record surveys, strategies for developing management plan. The book is primarily meant for museums and galleries in United Kingdom and provides various legal provisions and additional resources.

18. The book titled *'Preserving Our Heritage: Perspectives from Antiquity to the Digital Age'* **(Cloonan, 2012)** draws on a multitude of historical texts and provides perspectives on preservation, as early from 700 BC to the 19th century. Each section of the book is based on historical works that are correlated with the contemporary thinking and practices. It provides a broad overview on a variety of topics including longevity, reversibility, enduring value, and authenticity of information and

preservation. While discussing the history and context of preservation, the author provides significant insights into conservation, historic preservation, moving images, and other cultural heritage institutions. This book covers such key topics as: cultural heritage and risks to cultural heritage from time and nature, preservation in the context of manmade environment such as libraries, archives, museums, digitization, the preservation of time-based media, obsolescence, contemporary collection development and management issues, important frameworks for the discipline, such as policy, ethics and values, sustainability and multicultural perspectives. The author presents an insightful commentary on each facet of preservation and offers global and current view of the field.

19. Method of improving the image quality of digital copies of historical documents is presented in the book chapter titled '*Digital restoration by denoising and binarization of historical manuscripts images'* **(Ventzas et al., 2012).** The authors focused on two basic techniques – denoising and binarization – for text-background enhancement and restoration of manuscript images. The authors experimented with various algorithms on the digital images of old pages that are photographically acquired from historical books and manuscripts. The chapter describes in detail the algorithms applied on foreground and background images, histogram analysis, color processing, image type classification according to their condition and their spatial structure, global and local features, document image data mining, etc. The authors conclude that there is no single suitable method that can be applied for the restoration of all types of images.

20. In the book titled *'Disaster Planning for Libraries: Process and Guidelines'* author **Robertson (2013)** maintains that various kinds of risks constantly hover on the libraries such as fire, flood, high winds, power outages, and criminal behavior by the unscrupulous. He points out that many libraries and their collections are damaged every day and so, the book emphasizes on developing a plan to protect the library its building and collection, staff and the users. All the twelve chapters of the book describe essential areas of plan development. The topics included in the book give an overview of the risks faced by the libraries, disaster preparedness, resuming operations after a disaster and assessing damage, declaring disaster and managing a crisis, cleaning up and normalizing relations, staff training, testing disaster plans, and in-house planning. The book provides a practical approach to developing a comprehensive disaster management plan for library of any size. The book

supplements technical information with interviews and case studies and includes appendices covering pandemic management, moisture control, and library security.

2.5 Review of Reports/Documents and Government publications

1. A technical report published by the UNESCO **(Raghavan, 1979)** titled *"Preservation of Palm Leaf and Parabaik Manuscripts and Plan for Compilation of a Union Catalogue of Manuscripts: Socialist Republic of the Union of Burma - (mission)'* discusses a model plan for the compilation of a union catalogue of manuscripts with a focus on Burmese manuscripts. The author suggests that such an effort requires a phased programme rather than a single scheme. He also stresses on the need for cooperation among the institutes and libraries possessing such collections.

2. Another significant report published by UNESCO titled *'Appropriate technologies' in the conservation of cultural property'* **(UNESCO, 1981)** describes several indigenous methods practiced for centuries in various countries for preserving their cultural properties. In the article titled *'Appropriate' Indian technology for the conservation of museum collections'* **(Agarwal, 1981)** while mentioning several traditional practices Indians have been using, the author states that 'keeping peacock feathers inside books and manuscripts is commonly believed to have very beneficial effects. One feather is inserted after every ten or fifteen leaves. It has been observed, for reasons yet unknown, that paper materials that have peacock feathers placed between their leaves do not ordinarily attract bookworms. Students are commonly encouraged by their parents to keep these feathers inside their books' (p.74). He also mentions use of snake slough as it contains insecticidal properties. He says a piece of this slough kept between the leaves of books has commonly been observed to keep them free of bookworms. This observation of O.P. Agarwal about peacock feathers led to the serious investigation by Kharbade and Agrawal who conclude that there are no inorganic insect repellents present in the peacock feathers **(Kharbade & Agrawal, n.d.)**.

3. In the *'Guidelines on preservation and conservation policies in the archives and libraries heritage'* published by the UNESCO **Chapman et al (1990)** argue that sound preservation and conservation programmes are multifaceted. The report outlines the ideal conservation programmes that should include preventive measures to minimize deterioration in storage and handling, staff and user training programmes, housekeeping routines to clean, protect, and extend the life of materials,

security measures and contingency plan for disaster control and recovery, substitution programmes, conservation treatment for repair of damaged originals and procedures for exhibitions and loans.

4. A report published by the Council of Library and Information Resources, USA and authored by **Smith (1999)** summarizes advantages and disadvantages of digitizing culturally significant materials. The report is based on the assessment of impact of digitization on larger libraries such as Library of Congress, the National Archives, and major research libraries in the Digital Library Federation, and on smaller institutions such as the Huntington and Denver Public libraries. The report aims to provide an early assessment of the impacts of new technologies on traditional library roles. The author says expectations of benefits, cost reductions, and efficiencies that digitization often is associated with can be illusory and, if not viewed realistically, have the potential to put at risk the collections and services libraries have provided for decades. He completely downplays the view that digital conversion has already or will shortly replace microfilming as the preferred medium for preservation reformatting and warns that such a hurried judgment could result in irreversible losses of information. He says 'librarians everywhere hear the voices of people urging the conversion of text and visual materials into digital form as if conversion per se were a self-evident good. But, he argues, because we tend to imagine the future in terms of the present, such projections of the present onto the future may, at best, be misleading. One great disadvantage of digital data, he points out is that digital information is not eye-legible: it is dependent on a machine to decode and re-present the bit streams in images on a computer screen. Without that machine, and without active human intervention, those data will not last.

Digital format offers plasticity to change easily and without trace of erasures or emendations, but from the perspective of a library or archives that endeavors to collect a text that is final and in one sense or another definitive, the question of which version of the file, or how many versions, should be archived becomes problematic. There are also formidable technical obstacles to ensuring the persistence of digital information.

He points out that digitization is not preservation yet. All recorded information, from the paintings on the walls of caves and drawings in the sand, to clay tablets and videotaped speeches, has value, even if temporary or it would not have been recorded to begin with. That which the creator or transcriber deems to be of enduring value is

written on a more or less durable medium and entrusted to the care of responsible custodians. Other bits of recorded information, like laundry lists and tax returns, are created to serve a temporary purpose and are allowed to vanish. Libraries and archives were created to collect and make available that which has long-term value. And libraries and archives serve not only to safeguard that information, he points out, but also to provide evidence of one type or another of the work's provenance, which goes towards establishing the authenticity of that work.

5. **Jeyaraj (2007)** in his book titled *'Care of Archival Materials and Manuscripts'* published by the Special Commissioner and Commissioner of Museums, Government Museum, Chennai describes environment suitable for the safe keep of records and manuscripts. While describing the traditional methods of preservation, he elaborates on various techniques suitable for preservation of records and manuscripts on bark, parchment, palm-leaves, paper, bamboo, ivory, textile, photographs, negatives and other modern documents, writings on clay tablets and potsherds, records and inscriptions on stone, metals. He also presents technique for carrying out lamination of records and manuscripts on paper. Describing digitization and storage of records and manuscripts the author suggests action plan to be adopted for disaster management in Archives, Libraries and Museums.

6. A useful handbook published by the National Archives of India **(*National Archives of India A Handbook of Information (In Pursuance of Right to Information Act 2005),* 2008)** apart from providing detailed information on the hierarchical structure and functioning of NAI, gives as appendices Public Records Act, 1993, Public Records Rules, 1997, Report of Indian Historical Records Commission. It also provides various financial assistance schemes offered to State/Union territories, archival repositories, government libraries and museums. The financial assistance for preservation of manuscripts/ rare books to other agencies is a very useful scheme for all those institutions working in the conservation.

7. CHARISMA - Cultural Heritage Advanced Research Infrastructures: Synergy for a Multidisciplinary Approach to Conservation/Restoration, is a European Union funded project meant to build a user-friendly platform to facilitate research in the diagnostics, analysis and assessment of materials of cultural heritage, identification of artistic techniques, identification of the cause and effects of deterioration processes, and in situ monitoring during and after restoration **(*Final Report Summary - CHARISMA*, 2014)**. The report points out that many risks of deterioration can be

mitigated with the proper knowledge of materials and degradation processes. It points out that detailed knowledge of the composition or structure of an artwork or an archaeological artifact is a prerequisite for action of conservation-restoration. The report argues out that due to their origin and ageing, heritage materials are generally mixtures of inorganic phases (crystalline or amorphous) and organic compounds (often at the micro- and nano scale), and mapping of constituents - the distribution of elemental composition, crystal structures, molecular signatures, etc., are essential for preservation, conservation and restoration. The report lists out portable or micro invasive advanced techniques used nowadays such as laser, synchrotron and ion beams, micro focused spectroscopy and full-field imaging. In respect of conservation methodologies, the report points out that laser technology is offering new solutions to the complex problems of cleaning dirt encrusted artifacts.

8. IFLA Rare Book and Manuscripts Section published the 'Guidelines for Planning the Digitization of Rare Book and Manuscript Collections' in 2014. It informs that 'Copyrighted materials can also be digitized under adjudicated regulations and agreements' **(IFLA Rare Books and Special Collections, 2014)**. It also points out that 'a digitized object can be considered a new edition in itself. As a result, the availability and terms of use for every digitized object and collection should be clearly stated to users'. It argues in favor of digitization and maintains that 'without digitization, rare and special collections remain obscure and hidden'.

9. The National Mission for Manuscripts published 'Basic Minimum Standards for Conservation of Manuscripts. Explaining the significance of manuscript conservation the booklet states that 'many manuscripts contain references to events of the past. At the same time, those manuscripts which have survived for centuries, themselves have significance of antiquity. Many of the manuscripts have been written by eminent personalities of their times, or contain their thoughts. The material of the manuscripts, the methods and techniques with which the leaf, the bark or the paper was processed and the manners in which the inks were prepared also have great historical significance as most of these practices have fallen to disuse and the manuscripts are the only unique surviving examples of these practices'. It also outlined several guidelines and minimum standards for conservation of manuscripts.

10. Another significant document published by the National Mission for Manuscripts is titled *'Guidelines for the digitization of archival material'* **(Tripathi, n.d.).** It sets out the guidelines and specifies standards for organizations for creating archival

quality digital still images of manuscripts, printed books, maps, photographs, slides, negatives, microfilms, etc. The guidelines specify factor affecting image quality, file formats, storage and access standards for images and are prescribed to maintain consistency of image quality, scanning methods and accessibility. These guidelines help to create images for long-term usage and reduce the need to rescan material. The digitization process is sequenced in this document as follows:

Selection of materials → Treatment/ Conservation/ Handling of materials → Equipment Selection → Image capture → Image processing and cleaning → Quality control as per Output Specifications → Subject Metadata → Integration → Storage (Short Term / Long Term) → Migration Policy → Retrieval.

2.6 Conclusion: The above review of literature consisting of theses, journal articles, conference proceedings, books and book sections, Review of Reports/ Documents and Government publications has provided a strong theoretical framework for the present study. The review of Theses/dissertations ranged from 'Museum Method and the Process of Cleaning and Preservation/Library Preservation' submitted by **Basu** in 1950 to the dissertation submitted by Nida Khan in 2019 on development and management of collections in National Library Kolkata, Rampur Raza Library Rampur and Maulana Azad Library. The Review of Journal Articles are classified under six headings: 1. On Collection Development and Organization of Manuscripts, 2. On the Nature of Manuscripts and Conservation, 3. On Digitization and Digital Preservation, 4. On Indian Manuscripts and Case Studies, 5. On Heritage Collection Abroad and 6. On Efforts by Governmental Agencies.

Article review ranged from **Robert B Downs'** article *'Collecting manuscripts by libraries'* in 1957 to **Potter & Holley's** *'Rare Material in Academic Libraries'* in 2010 on one hand and 'A Study on Palm leaf Manuscripts' by **Chakravarti** in 1947 **Renganathan & Ashok's** Photolam system on the other. **Raja & Arora's** article '*Digitization, Preservation & Management of Rare Materials in Modern Library System*' in 2004 to **Veena's** paper titled *'Technical Approaches to Conservation: The Challenges of Digitization of Manuscripts'* in 2015 cover the digitization and digital preservation techniques. Articles on Indian Manuscripts and Case Studies ranged from **Londhe et al'**s case study on the digitization of manuscripts adopted in the Jayakar Library, University of Pune in India in 2011 to article on Khuda Baksh Public Library, Patna by **Mahmood & Khan** in 2017. Article review on heritage collection

abroad ranged from the research article *'Malay Manuscripts: Materials and Problems of Conservation'* by **Ming** in 1993 to **Russo's** case study on manuscript collections of Timbuktu and other Malian cities in 2017. As regards to the efforts by governmental agencies reviewed spanned across **Singh's** article *'Digital Preservation of Cultural Heritage Resources and Manuscripts: an Indian Government Initiative'* in 2012 to **Bakshi's** account of IGNCA's efforts in cultural preservation in *'Digitization and Digital Preservation of Cultural Heritage in India with Special Reference to IGNCA, New Delhi'* in 2016.

Review of Conference Proceedings ranged from **Kumar & Shah's** paper that emphasized on the need to conserve and digitally preserve manuscripts in 2004 to **Singh & Parabhoi's** case study on the digitization of monographs and rare books by the Indian Institute of Advanced Studies, Shimla, Himachal Pradesh in 2016.

The review of books and book sections covered **Langwell's** 'The conservation of books and documents' in 1957 to **Robertson**'s book titled *'Disaster Planning for Libraries: Process and Guidelines'* published in 2013.

Review of reports/documents and government publications spanned across the technical report published by the UNESCO in 1979 titled *"Preservation of Palm Leaf and Parabaik Manuscripts and Plan for Compilation of a Union Catalogue of Manuscripts: Socialist Republic of the Union of Burma - (mission)'* to National Mission for Manuscripts *'Guidelines for the digitization of archival material'***.**

Every resource reviewed unfolded some new facts providing an insight into the need for preserving invaluable rare documents. The literature review enabled to understand the nature and types of rare documents, causes of damage and deterioration, the techniques and procedures adopted in traditional to modern preservation and conservation practices, remedial measures to enhance the shelf life and to give a new lease of life to these national heritage records. The pros and cons of digitization and digitization standards recommended by IFLA, LoC and other world agencies are also studied.

The above discussion clearly underscores the significance and importance of conservation and digitization of manuscripts.

REFERENCES:

Agarwal, O. P. (1981). Appropriate Indian technology for the conservation of museum collections. In *"Appropriate technologies" in the conservation of cultural property* (p. 134). UNESCO Press. http://164.125.174.23:8080/lee/00_book_%27Appropriate%20technologies%27%20in%20the%20conservation%20of%20cultural%20property.pdf

Ahmed, F. (2009). Digitization as a Means of Preservation of Manuscripts: Case Study of Osmania University Library. *7th International CALIBER*, 93–97. http://web.inflibnet.ac.in/caliber2009/CaliberPDF/12.pdf

Alhakoon, C. N. K. (2006). Identification of physical problems of major palm leaf manuscripts collections in Sri Lanka. *Journal of the University Librarians of SriLanka*, *10*. http://www.sljol.info/index.php/JULA/article/view/318/361

Ameen, K., & Shafique, F. (2009). Oriental Collection in the Punjab University Library A Case Study. *Trends in Information Management*, *5*(1). http://ojs.uok.edu.in/ojs/index.php/crdr/article/viewFile/141/129

Anuradha, R. H. (2015). New reflections on curative conservation of manuscripts. *International Journal of Academic Research*, *2*(3/6), 6–14.

Bakhshi, S. I. (2016). Digitization and Digital Preservation of Cultural Heritage in India with Special Reference to IGNCA, New Delhi. *Asian Journal of Information Science and Technology*, *6*(2), 1–7.

Balakrishna, P. (2011). *Preservation and organization of manuscripts in the libraries of Andhra Pradesh A study* [PhD Thesis, Sri Krishnadevaraya University]. http://hdl.handle.net/10603/65216

Balloffet, N., Hile, J., & Reed, Judith. A. (2005). *Preservation and conservation for libraries and archives* (Judith. A. Reed, Ed.). American Library Association.

Banks, P. N. (1978). Preservation of library materials. In *Encyclopedia of Library and Information Science* (Vol. 23, pp. 180–222). Marcel Dekker Inc.

Baskar, K., & Babu, B. R. (2013). Manuscripts Collection Development in Mahamahopadhyaya Dr. U.V. Swaminatha Iyer Library: A Case Study. *Asian Journal of Information Science and Technology*, *3*(1).

Basu, M. (1950). *Museum method and the process of cleaning and preservation/library preservation*. University of Calcutta.

Bhattacharjee, S. (2017). Storage and Handling of Manuscripts. *International Journal of Humanities and Social Science Invention*, *6*(2), 30–32.

Boruah, S. (2010). Miniature Paintings of the Assamese Manuscript. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 41–50). National Mission for Manuscripts and Dev Books.

Brunskill, C., & Demb, S. (2012). *Records management for museums and galleries: An Introduction*. Chandos Publishing.

Chakravarti, S. (1947). A Study on Palm leaf Manuscripts. *The Indian Archives*, *I*(4), 304–312.

Channabasappa, D. B. (2015). Indian Constitutional Provisions towards Conservation of Archaelogical Inheritance. *International Journal of Academic Research*, *2*(3/6), 19–22.

Chapman, P., RAMP (Program), Unesco., General Information Programme., & UNISIST (Program). (1990). *Guidelines on preservation and conservation policies in the archives and libraries heritage*. United Nations Educational, Scientific, and Cultural Organization; /z-wcorg/.

Chatterjee, A., & Maity, A. (2012). A Study on Post Doctoral Researches in Library and Information Science in India. *International Journal of Information Library & Society*, *1*(1), 54–65.

Chhatwal, A., Kanwal, P., & Lal, P. (2009). Digital Heritage Archiving in India: A Case Study of Panjab University Library, Chandigarh. *InFuture2009: Digital Resources and Knowledge Sharing*, 145–153. https://infoz.ffzg.hr/infuture/2009/papers/2-10%20Chhatwal,%20Kanwal,%20Lal,%20Digital%20Heritage%20Archiving%20in%20India.pdf

Chopra, Harinder Singh. (1994). *A study of manuscript depository: Guru Nanak Dev University* [(Ph.D thesis).]. Guru Nanak Dev University.

Chopra, H.S., & Narang, A. (2007). Digital preservation of archives and manuscripts: An Indian scenario. *5th International CALIBER*, 8–10. http://ir.inflibnet.ac.in/bitstream/1944/511/1/25-33.pdf

Choukhande, V. G., & Dange, J. (2005). Preservation and Digitisation of Rare Collection of Dr. Panjabrao Deshmukh Smruti Sangrahalaya, Amravati. *3rd International CALIBER*, 648–652. http://ir.inflibnet.ac.in/bitstream/1944/1155/1/76.pdf

Cloonan, M. V. (2012). *Preserving Our Heritage: Perspectives from Antiquity to the Digitial Age*. Neal-Schuman Publishers, Incorporated. https://books.google.co.in/books?id=EwuFtgAACAAJ

Cotton, J., & Sharron, D. (2011). *Engaging students with archival and digital resources*. Chandos Publishing.

Cunha, G. M., & Cunha, D. G. (1971). *Conservation of library materials: A Manual and Bibliography on the Care, Repair, and Restoration of Library Materials*. The Scarecrow Press.

Das, A. K. (2008). *An evaluative study of some selected libraries in India undergoing the process of digitization* [PhD Thesis, Jadavpur University]. http://hdl.handle.net/10603/19137

Das, U. (2013). *A critical study of preservation techniques for sanchi manuscripts of Assam* [PhD Thesis, Gauhati University]. http://hdl.handle.net/10603/118043

Devi, L. S. (2014). *Conservation and preservation of Manuscripts in Manipur* [PhD Thesis, Manipur University]. http://hdl.handle.net/10603/254457

Downs, R. B. (1957). Collecting Manuscripts: By Libraries. *Library Trends*, *5*. https://www.ideals.illinois.edu/bitstream/handle/2142/5705/librarytrendsv5i3f_opt.pdf?sequence=1

Final Report Summary—CHARISMA (pp. 1–37). (2014). UNIVERSITA DEGLI STUDI DI PERUGIA. https://cordis.europa.eu/project/id/228330/reporting

Gangamma, B., K, M., S., & Singh, A. V. (2012). Restoration of degraded historical document image. *Journal of Emerging Trends in Computing and Information Sciences*, *3*, 5.

Gaur, R. C., & Chakraborty, M. (2009). Preservation and access to Indian manuscripts: A knowledge base of Indian cultural heritage resources for academic libraries. In *ICAL 2009 – Vision and roles of the future academic libraries* (pp. 5-). University of Delhi.

Ghosh, S., Mahajan, A., & Banerjee, S. (2017). Palm Leaf Manuscript Conservation, the Process of Seasoning with Special Reference to Saraswati Mahal Library, Tamilnadu in India: Some Techniques. *International Journal of Information Movement*, *2*(2), 122–128.

Graham, T. (2003). Electronic access to and the preservation of heritage materials. *The Electronic Library*, *21*(3). https://doi.org/10.1108/02640470310480461

Gupta, K. K. (2010). Conservation of manuscripts on palm leaves. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 1–10). National Mission for Manuscripts and Dev Books.

Hasan, N., Mohammad, A., & Bedar, S. (2016). Digital Preservation of Rare Books & Manuscripts: A Case Study of Aligarh Muslim University. *International Research: Journal of Library & Information Science*, *6*(4). http://irjlis.com/wp-content/uploads/2017/02/1-IR-379-64.pdf

Hingorani, K. (2015, August 9). Over 1 lakh rare books, 2,500 manuscripts set to be digitised. *The Hindu*. http://www.thehindu.com/news/cities/mumbai/over-1-lakh-rare-books-2500-manuscripts-set-to-be-digitised/article7519164.ece

IFLA Rare Books and Special Collections. (2014). *Guidelines for Planning the Digitization of Rare Book and Manuscript Collections*. IFLA.

Ing, A. N., Ibrahim, I. B., Samad, S. B. A., Ismailly, N. B., & Sulaiman, S. B. (2011, June 22). Preservation of Sarawak Manuscript. *Proceedings of the Asia-Pacific Conference On Library & Information Education & Practice*. A-LIEP2011, Putrajaya, Malaysia. http://eprints.uitm.edu.my/3559/1/SP_POS11_55.pdf

Ingole, K. R., & Shandilya, V. K. (2011). Image Restoration of Historical Manuscripts. *International Journal of Computer Science & Engineering Technology*, *2*(4), 102–107.

Jan, R., Islam, S., & Qadri, U. (2012). Rare collection about Kashmir: Survey and documentation. *Brazilian Journal of Information Science: Research Trends*, *6*(1). http://www2.marilia.Unesp.br/revistas/index.php/bjis/index

Jeyaraj, V. (2007). *Care of Archival Materials and Manuscripts: Vol. XII* (2nd ed.). The Special Commissioner and Commissioner of Museums, Government Museum.

Jeyaraj, V. (2010). Storage of manuscripts and conservation guidelines. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 97–102). National Mission for Manuscripts.

Jimerson, R. C. (2002). The nature of archives and manuscripts. *OCLC Systems & Services*, *18*(1), 21–23. https://doi.org/10.1108/10650750210424788

Jimerson, R. C. (2003). Deciding what to collect. *OCLC Systems and Services*, *19*(2). https://doi.org/10.1108/10650750310481766

Kaplan, E. (2000). We are what we collect, we collect what we are: Archives and the construction of identity. *American Archivist*, *63*, 126–151.

Kathpalia, Y. P. (1973). *Conservation and Restoration of Archive Materials*. UNESCO.

Khan, K. (2013). Oriental manuscripts in Shri Partap Singh (SPS) library Srinagar, Kashmir (India. *Brazilian Journal of Information Science*, *7*, 2.

Khan, N. (2019). *Collection Development Management and Use of Manuscripts in National Library Kolkata Rampur Raza Library Rampur and Maulana Azad Library Aligarh A Study* [PhD Thesis, Aligarh Muslim University]. http://hdl.handle.net/10603/292203

Kharbade, B. V. (2010). Preliminary Report on the Conservation of Kaditas (Black Mmanuscripts). In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 57–64). National Mission for Manuscripts and Dev Books.

Kharbade, B. V., & Agrawal, K. C. (n.d.). Scientific Elucidations of Peacock Feathers Believed to be Used as a Preservative for the Manuscripts. *NRLC Research Papers*, 99–108.

Kumar, A. (2014). *A critical study of art manuscripts in Himachal Pradesh* [PhD Thesis, Himachal Pradesh University]. http://hdl.handle.net/10603/128156

Kumar, D. U., Sreekumar, G. V., & Athvankar, U. A. (2009). Traditional writing system in Southern India—Palm leaf manuscripts. *Design Thoughts*, 2–7.

Kumar, S., & Shah, L. (2004). Digital Preservation of Manuscripts: A Case Study. *PLANNER - 2004*, 27–36.

Kundu, A. (2009). *Conservation care and management of manuscripts in museums of West Bengal a micro study* [PhD Thesis, University of Calcutta]. http://hdl.handle.net/10603/154741

Langwell, W. H. (1957). *The Conservation of Books and Documents*. I. Pitman. https://books.google.co.in/books?id=17UmwwEACAAJ

Londhe, N. L., Desale, S. K., & Patil, S. K. (2011). Development of a digital library of manuscripts: A case study at the University of Pune, India. *Program: Electronic Library and Information Systems*, *45*(2). https://doi.org/10.1108/00330331111129697

Madaani, N. (2013, April 28). 40,000 manuscripts digitized in institutes of Pune. *The Times of India*. http://timesofindia.indiatimes.com/city/pune/40000-manuscripts-digitized-in-institutes-of-Pune/articleshow/19760951.cms

Madhusudan, P. (2017). *Digitization of Manuscripts In Oriental Libraries In South India A Study* [PhD Thesis, Sri Venkateswara University]. http://hdl.handle.net/10603/235054

Mahapatra, G. S. (2008). *Documentation and care of manuscripts in museums in Eastern India Orissa West Bengal Bihar and Jharkhand* [PhD Thesis, University of Calcutta]. http://hdl.handle.net/10603/162316

Mahawar, K. L., & Kuriya, M. K. (2013). Conservation and preservation of manuscripts in the Saulat Public Library, Rampur, Uttar Pradesh. : A survey and proposal for their modernization.

International Journal of Humanities and Social Science Invention, *2*(3), 4–8.

Mahmood, Z., & Khan, H. R. (2017). Digital Preservation of Rare Manuscripts in Khuda Bakhsh Oriental Public Library, Patna. *PEARL - A Journal of Library and Information Science*, *11*(1). https://doi.org/10.5958/0975-6922.2017.00008.0

Maltesh, N. M. (2010). *Buddhist Manuscripts with special reference to Arunachal Pradesh utilisation restoration and digitisation* [PhD Thesis, Gauhati University]. http://hdl.handle.net/10603/229633

Mazumdar, N. R. (2009). Digital preservation of rare manuscripts in Assam. In *7th International CALIBER-2009: Vol. February 25-27* (pp. 14–19).

Mazumdar, R. N. (2015). *Management of manuscript collection in Assam in digital era a practical approach using ICT tools* [PhD Thesis, Gauhati University]. http://hdl.handle.net/10603/132564

Ming, D. C. (1993). Malay manuscripts: Materials and problems of conservation. *Journal of the Malaysian Branch of the Royal Asiatic Society*, *66*, 2.

Mishra, V. K. (2012). Indigenous method of manuscript conservation. *Global Research Methodology Journal*, *4*. http://www.grmgrlaranya.com/Journals/4th%20issue/INDIGENOUS%20METHOD%20OF%20MANUSCRIPT%20CONSERVATION.pdf

More, T. D. (2015). *Role of oriental libraries in India with special reference to Deccan* [PhD Thesis, Tilak Maharashtra Vidyapeeth]. http://hdl.handle.net/10603/120584

Morris, J. (1986). Preservation and conservation. In *The Library Disaster Preparedness Handbook*. American Library Association.

Mukherjee, B. B. (1973). *Preservation of library materials, archives and documents*. The World Press Private Ltd.

Narang, A., & Singh, S. (2014). Preservation and Conservation of Manuscripts and Rare Documents in National Archives of India and National Mission for Manuscripts: Problems and prospects. *Information Age*, *9*(2).

Narang, Asha. (2006). *Care and preservation of library documents in universities, archives and colleges of Punjab, Haryana and Chandigarh* [(Ph. D thesis).]. Guru Nanak Dev University.

National Archives of India A Handbook of Information (In Pursuance of Right to Information Act 2005). (2008). National Archives of India.

Nurdin, A. R. (2012). The manuscript collection of the Aceh museum. *Indonesia and the Malay World*, *40*(116). https://doi.org/10.1080/13639811.2011.649001

Padhi, B. K. (1974). Preservation of Palm Leaf Manuscripts In Orissa. *Conservation of Cultural Property of India*, *VII*, 62–64.

Padmavati, D. B. (2015). Building A Career in Manuscript Conservation—Opportunities and Challenges. *International Journal of Academic Research*, *2*(3/6), 45–48.

Panage, B. M. (2003). *Conservation and preservation of library materials with special reference to digitization of rare materials* [PhD Thesis, Savitribai Phule Pune University]. http://hdl.handle.net/10603/175048

Pandher, B. K. (2012). User's perception and their feedback about digitization of manuscripts and their use in Punjabi University, Patiala & Panjab University, Chandigarh and VVRI, Hoshiarpur. *International Journal of Information Dissemination and Technology*, *2*(2), 117–123.

Phillips, F. (1984). Developing collecting policies for manuscript collections. *American Archivist*, *47*, 1.

Potter, S., & Holley, R. P. (2010). Rare material in academic libraries. *Collection Building*, *29*(4). https://doi.org/10.1108/01604951011088880

Qutab, S. (2012). State of manuscripts in Pakistan. *Chinese Librarianship: An International Electronic Journal*. http://www.iclc.us/cliej/cl34saima.pdf

Raghavan, V. (1979). *Preservation of palm leaf and parabaik manuscripts and plan for compilation of a union catalogue of manuscripts: Socialist Republic of the Union of Burma—(Mission)* (pp. 11–13) [(Technical Report).]. UNESCO.

Raja, M. M., & Arora, R. L. (2004). Digitization, preservation & management of rare materials in modern library system. *IASLIC Bulletin*, *49*, 89–92.

Ramana, Y. V. (2005). Digital preservation of Indian manuscripts: An overview. In *3rd International CALIBER 2005* (pp. 370–376). Cochin, Cochin University.

Ramponi, G., Stanco, F., Russo, W. D., Pelusi, S., & Mauro, P. (2005). Digital automated restoration of Manuscripts and antique printed books. *Proceedings of EVA 2005 Electronic Imaging and the Visual Arts*, 764–767. http://iplab.dmi.unict.it/sites/default/files/papers/EVA05.pdf

Rattan, P., & Singh, R. (2014). A study of Government initiatives of digitizing manuscripts in Punjab (India. *International Journal of Multidisciplinary and Current Research*, *2*, 909–914.

Raval, V. (2016). *Heritage preservation in indian cultural modern practice and their possible integration with special reference to manuscripts* [PhD Thesis, Gujarat University]. http://hdl.handle.net/10603/186571

Renganathan, P., & Ashok, R. P. R. (n.d.). *Restoration of traditional heritage for posterity*. http://www.photolam.com/Download/RESTORATION%20OF%20TRADITIONAL%20HERITAGE%20FOR%20POSTERITY.pdf

Robertson, G. (2013). *Disaster planning for libraries: Process and guidelines*. Chandos Publishing.

Russo, M. L. (2017). Contemporary librarianship and special collections issues: A case study in manuscript collections of Timbuktu and other Malian cities. *Italian Journal of Library, Archives, and Information Science*, *8*(1). https://doi.org/10.4403/jlis.it-12136.

Sah, S. lal. (2017). *Uttarakhand ki pandulipi parampara ek adhyan prarambh sai 1900 tak* [PhD Thesis, Kumaun University]. http://hdl.handle.net/10603/204680

Sahoo, J., Sahoo, B., Mohanty, B., & Dash, N. K. (2013). Indian Manuscript Heritage and the Role of National Mission for Manuscripts. *Library Philosophy and Practice*. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2384&context=libphilprac

Sahoo, Jyotsana, & Mohanty, B. (2004). Indigenous methods of preserving manuscripts: An overview. *The Orissa Historical Research Journal*, *XLVII*(3), 28–32.

Sarasvathy, P. (2007). *Preservation and conservation of rare materials in select libraries in Karnataka a study* [PhD Thesis, University of Mysore]. http://hdl.handle.net/10603/73608

Sauer, C. K. (2001). Doing the Best We Can? The Use of Collection Development Policies and Cooperative Collecting Activities at Manuscript Repositories. *The American Archivist*, *64*, 2.

Seifi, L. (2011). Digitization and digital preservation of manuscripts and access in organization of libraries, museums and documents center of Astan Quds Razavi Library in IRAN: A Case Study. *8th International CALIBER*, 280–284. http://ir.inflibnet.ac.in/bitstream/1944/1618/1/28.pdf

Seifi, Leili. (2011). *Digitization and digital preservation of the heritage collection in select libraries in India and Iran: A comparative study* [PhD Thesis, University of Mysore]. http://hdl.handle.net/10603/17836

Shafi, S. M., & Lone, M. I. (2012). Oriental manuscripts in India: A literature survey. *Library Review*, *61*(8/9), 577–591. https://doi.org/10.1108/00242531211292088

Sharma, A. (2011). *Conservation and digitization of manuscripts in university libraries in India* [PhD Thesis, Panjab University]. http://hdl.handle.net/10603/106921

Shukla, P. S. (1980). Preservation of library materials. *Indian Library Movement*, *2*, 73–78.

Siddiqi, I., Cloppet, F., & Vincent, N. (2010). Contour Based Features for the Classification of Ancient Manuscripts. *Pattern Recognition*, *43*(11), 3853–3865.

Simila, K. (2013). CollAsia 2010: Conserving Cultural Heritage Collections in Southeast Asia. *International Preservation News IFLA PAC, 59–60*, 4–10.

Singh, A. (2012). Digital preservation of cultural heritage resources and manuscripts: An Indian government initiative. *International*

Federation of Library Associations and Institutions, *38*(4), 289–296. https://doi.org/10.1177/0340035212463139

Singh, R., & Parabhoi, L. (2016). Digitization of Monographs, Rare Books at Indian Institute of Advanced Study Shimla: A Case Study. *10th Convention PLANNER, 09-11 November, 2016*, 109–116. http://ir.inflibnet.ac.in/bitstream/1944/2017/1/13.pdf

Singh, S. (2015). *Preservation and Conservation of Manuscripts and Rare Documents in National Archives of India and National Mission for Manuscripts* [PhD Thesis, Guru Nanak Dev University]. http://hdl.handle.net/10603/96470

Slowik, A. J. W. (2009). Collecting medieval manuscripts. *Collection Building*, *28*(3). https://doi.org/10.1108/01604950910971161

Smith, A. (1999). *Why digitise?* Council of Library and Information Resources. http://www.clir.org/pubs/report/pub80-smith/pub8html.

Soumoni, D. (2018). *PREVENTION of BIODETERIORATION in TEXTILE and PAPER OBJECTS USING INDIGENOUS METHODS WITH SPECIAL REFERENCE TO MUSEUM COLLECTIONS IN TROPICAL CLIMATE* [PhD Thesis, Rabindra Bharati University]. http://hdl.handle.net/10603/285539

Stewart, V. R. (1976). A Primer on Manuscript Field Work. *The Midwestern Archivist*, *1*(2), 1–18.

Suma, D. G. (2015). The Treasures of Knowledge—Manuscript Libraries in India. *International Journal of Academic Research*, *2*(3/6), 49–59.

Suri, J. H. (1947). Palm leaf Manuscripts in Jaisalmir. *The Indian Archives*, *I*(3), 234–235.

Suryawanshi, D. G. (2010). Studies on methods of lamination of birch bark manuscripts. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 75–84). National Mission for Manuscripts.

Sutton, S. C. (1967). *A guide to the India Office Library: With a note on the India Office Records*. Her Magesty's Stationary Office.

Thiyam, S. D. (2005). *Manuscripts of Manipur: Study in the modern perspective* [PhD Thesis, Manipur University]. http://hdl.handle.net/10603/41163

Tripathi, D. (Ed.). (n.d.). *Guidelines for the digitization of archival material*. Director, National Mission for Manuscripts.

Tripathi, D. (2013). Preserving the Past for the Future: National Mission for Manuscripts, India. *International Preservation News IFLA PAC*, *59–60*, 11–14.

UNESCO. (1981). *"Appropriate technologies" in the conservation of cultural property* (Protection of Cultural Heritage, p. 134) [Technical Handbook for Museums and Monuments]. UNESCO Press. http://164.125.174.23:8080/lee/00_book_%27Appropriate%20technologies%27%20in%20the%20conservation%20of%20cultural%20property.pdf

Veena, K. R. (2015). Technical Approaches to Conservation; The Challenges of Digitization of Manuscripts. *International Journal of Academic Research*, *2*(3/6), 78–82.

Ventzas, D., Ntogas, N., & Ventza, M. M. (2012). Digital restoration by denoising and binarization of historical manuscripts images. In D. Ventzas (Ed.), *Advanced image acquisition, processing techniques and applications I* (pp. 73–108). Intech. http://cdn.intechopen.com/pdfs-wm/32189.pdf

Warraich, N. F., & Tahira, M. (2010). Manuscript collection in the Punjab University Library: Assessing management issues. *Chinese Librarianship: An International Electronic Journal*, *29*, 1–13.

Yaqub, M. T., Onibon, O. N., & Olagunju, M. O. (2013). Management and Use of Arabic/Islamic Manuscripts in the Nigerian Universities: A Study of Kenneth Dike Library of University of Ibadan. *International Journal of Humanities and Social Science*, *3*(6), 194–200.

Zhang, A., & Gourley, D. (2008). *Creating Digital Collections: A Practical Guide*. Chandos Publishing.

CHAPTER – III

Cataloguing, Conservation and Digitization of Manuscripts

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Chapter - III

Conservation and Digitization of Manuscripts

3.0 Introduction:

This chapter devotes to examining the review of best practices in cataloguing, preserving and digitization of manuscripts across the world. The standards as enunciated by IFLA, UNESCO and NMM for conservation The standards as enunciated by IFLA, UNESCO, NMM and other professional bodies for cataloguing, conserving and digitizing manuscripts are described. The causes of deterioration, traditional methods of conservation, their effectiveness, and the modern methods of conservation, stocking and transportation, disaster preparedness are presented. The metadata standards for digitized content are also described.

3.1 Cataloguing of Manuscripts: One of the most important tasks of a manuscript custodian center after receiving the manuscripts in its possession is to catalogue them. Cataloguing is a process wherein all the salient features of the manuscripts are recorded. In simple terms catalogue is the collection of various descriptors about each item available at a particular place that enables the users to understand the nature of collection and identify the material he/she is looking for from among the collection.

The word catalogue is a derivative from the Greek word ‘Katalogos’ where ‘Kata’ means ‘by’ and ‘logos’ means order/reason/word (Lalitha, 2010). Thus catalogue means a list of items arranged in some definite order. Systematic arrangement of a manuscript is known as cataloguing. Catalogues are lists of a class of materials arranged in some convenient manner in order to enable any required item to be located and picked out easily to use (Chatterjee, 2010). The art of cataloguing manuscripts is different from that of the books. While the bibliographic details of a book are easily available within the book, many a times, the details of the manuscripts such as the author, date of writing, whether it is the original copy or a rewriting by a scribe, etc., may not be known. It is a commonly held view across the world that the catalogues of Indian manuscripts are often incomplete leaving many fields unfilled, inconveniencing the users, and failing to satisfy the needs of the researchers. Hence the cataloguer of a manuscript must take a very detailed view of the manuscripts before venturing to prepare the catalogue. The cataloguer should make every attempt

to provide as much detailed information as possible. Fortunately in the recent years, cataloguers are maintaining good standards in terms consistency and uniformity thanks to the stringent standards set forth by the NMM for data feeding on Bharatiya Kritisampada website which include diacritical marks for Indian languages, details of first and last lines, colophon, post colophon and some portion of the text, etc.

3.1.1 Brief History of Cataloguing of Manuscripts in India:

Cataloguing of Indian manuscripts has been a centuries old practice. Indian and European scholars have prepared a variety of catalogues. The first known compilation of manuscript catalogue is '*Brihat tippanika*' by a Jain Monk who listed about 600 manuscripts of Patan, Cambey and Bharauch in 1383. The manuscript of this catalogue is still preserved in the Shantinatha Bhandara, Patan. The next known major attempt was in the 17th century by a scholar named Kavindracharya who belonged to Varanasi. He prepared subject wise catalogue of 2,192 manuscripts of his personal collection between 1629 and 1688 and named it *suchipatram* (Chatterjee, 2010). One Dr. Nicholas, who was the Chief Surgeon at the General Hospital in Surat is credited to have completed a 15page list of manuscripts between 1788 and 1795. After the advent of printing press, the oldest known printed catalogue of Indian manuscripts 'A Catalogue of Oriental manuscripts, chiefly Persian, Arabian and Sanskrit languages collected in the East' was published by James Fraser in 1742. This catalogue gives details about 165 Arabic, Persian and 35 Sanskrit manuscripts. General Charles Stewart catalogued the library collection of Tipu Sultan of Mysore after the defeat and death of the king, which was published in 1809. Another important cataloguing of royal collection is done by K.Sambashiva Shastri who documented catalogued in 8 volumes the Travancore Palace Library collection of King Vishakham Tirunal which was published by V.V.Press in 1937. After the establishment of the Asiatic Society in Calcutta in 1785 by William Jones with the aim of manuscript collection and documentation, the Society was able to publish its first volume of catalogue of manuscripts during 1895-1909. The catalogue includes Sanskrit, Bengali, Rajasthani, Assamese, Tibetan, Arabic, Persian and Urdu manuscripts in various volumes. The revision of this series was initiated in1956. Sir William Jones and Lady Jones and Sir Charles Wilkins (1783) prepared catalogues of manuscripts which were published in the Philosophical Transactions of the Royal Society of London in 1798 and 1799 respectively. In 1838, a 149 page catalogue of 3,000 manuscripts in the holdings of

College of Fort Williams, College of the Asiatic Society of Bengal and Banaras Sanskrit Colleges was compiled by Pandit Ramagovinda Tarkaratna. In 1880, three important manuscript collections of Government Manuscript Library in Chennai were shifted to Government Oriental Manuscript Library, Thanjavur and a catalogue was prepared. In 1884, Oriental Research Institute Mysore also published a catalogue of its manuscript collection in 16 volumes. G. Buhler, F. Kickhorn, Peter Peterson, R.G.Bhandarkar, S.R. Bhandarkar are some of the many stalwarts who toiled hard to collect manuscripts and compile catalogues between 1867 and 1905. Bhandarkar Oriental Research Institute, Pune's first volume of catalogue of manuscripts was published in 1916. It is said that 27 volumes of manuscript catalogues were published during 1928-1952.

Rabindra Nath Tagore is also known for his extensive travel during 1927-32 when he collected many manuscripts from various places including far off places such as the Javanese Island and Persia (modern day Iran). These were housed in Tagore's Vishwa Bharati University. A descriptive catalogue of the total collection of the University was prepared by N. Aiyaswami, the Director of manuscripts library (Jain et al., 2013).

Thanks to the establishment of NMM, the locating documenting and cataloguing of manuscripts has gained considerable momentum in the last two decades several thousand manuscript catalogues are systematically prepared and uploaded on the national electronic catalogue – the Bharatiya Kriti Sampada. However still a large part of manuscript collection in various custodian centers is yet to be catalogued, let alone documented. It is estimated that there are 3.5 million manuscripts in various collection centers in India and roughly 1.5 million still in private undocumented locations. Of these, catalogues are perhaps available for not more than 20-25% of the manuscript collections (roughly 10,00,000) in the country (Singh et al., 2010). In a majority of cases only hand lists were prepared, giving some basic data, i.e., author, title, language, scripts, etc.

3.1.2 The Challenges in Manuscript Cataloguing: The cataloguers of manuscripts face many challenges as the bibliographic details of manuscripts vary from those of printed books. Some of them are summarized below:

1. While preparing the manuscript catalogue, the cataloguer's sole source of information is the manuscript itself. Unlike the printed books, manuscripts often do not contain title page, table of content, indices, author name, number of pages, number of illustrations, etc. The cataloguer has to find out its author, title, commentator, etc., either from colophon, or gleaning through the text.

2. Some works are created by anonymous authors. Owing to their spiritualistic philosophy, many ancient Indian poets do not record a great deal of their biographical information and sometimes there no mention of even their name as the author (Lalitha, 2010).

3. In some cases we may not know whether the manuscript in hand is in the original handwriting of the author or prepared by a scribe.

4. India is a land of diversity with many languages and innumerable dialects. Sanskrit was the pan-Indian language of our ancient and medieval literature. Even though the language was Sanskrit the script varied throughout the length and breadth of India. Before the advent of the printing machine, the scripts of various languages remained in non-standardized varying forms, changing from region to region and from era to era. The same alphabet may be written with variations by different scribes. Regional pronunciation, expressions of regional dialects, etc., also get introduced in the manuscripts. When the script and or the language of the manuscript is archaic and not in vogue it presents far many challenges to the cataloguer, let alone the researchers. Deciphering varying scripts of ancient and medieval languages in India requires a special skill. The cataloguer should be aware of the different writing styles.

5. Another problem is with the interpolations where some portions of other text is inserted in a particular manuscript.

6. Sometimes the manuscripts obtained may be incomplete with missing title page making it difficult to decipher the title of the manuscript. A Number of manuscripts are composite in nature and are also incomplete. Due to lack of care, loose sheets get intermixed causing problems (Lalitha, 2010).

7. Another important issue pointed out by Lalitha (2010) is that the cataloguer should not make the mistake of hurriedly determining the subject of the text merely by looking at the title of the manuscript. For example, she points out,

> text starting with the title Yoga can be on Yoga, Ayurveda, or Jyotisha. Similarly the text starting with Nyaya can be on Nyaya, Vaiseshika, Mimamsa, Advaita and so on (p.258).

To surmount these challenges, the following measures are to be kept in mind in every manuscript custodian center where cataloguing and documentation of manuscripts is undertaken:

1. The primary quality of a good cataloguer is that he must have innate love towards manuscripts he is cataloguing. If only a person with passion for conservation of ancient wisdom for posterity takes up the job, it will be given the due justice it truly deserves. Only scholars conversant with the language, various scripts and writing methods, etc., an ideal polyglot having broad subject knowledge must be entrusted with the job of cataloguing the manuscripts or at least supervise the cataloguing activity.
2. Lalitha (2010) recommends that the cataloguer should go an extra mile and contribute notes on unknown poets, works, illustrations and illuminations, calligraphy, insertions of some folios of some other manuscripts, if any.
3. The most suitable method for editing manuscript is by applying the principles of textual criticism. To make a proper critical edition more number of manuscripts of a work is required. The most desirable number is to have at least five manuscripts. If there is one manuscript only on the subject, then it is difficult for the editor to clear the doubts found in the manuscripts. Scribal errors and interpolations many not be identified (Nandi, 2010).

3.1.3 Cataloguing Standards:

Over the time, experience has taught cataloguers the art of cataloguing. They recommend investing time to identify the correct or conventional title, the beginning and the ending of the text, the date, character, material, collection, etc., before recording them in black and white.

There are several types of manuscript cataloguing methods in vogue (Chatterjee, 2010):

i) **Manuscript Search Report**: This is the basic report prepared by the field surveyors that provides general account of availability of manuscripts in a particular area with list of titles.

ii) **Simple list**: Often when new and unknown manuscript arrives in the manuscript custodian center, the first level of cataloguing called 'simple list' is prepared containing author and title of manuscripts. Since this type of list offers only bare description of the manuscripts it is not very useful for the scholars.

iii) **Alphabetical catalogue**: After all the physical descriptors of the manuscript are examined and collected, an exhaustive catalogue is prepared by alphabetically arranging the entries either by author or title. The descriptors include accession number, author, commentator, title, commentator, script, date, extent, length, breadth, thickness, number of folios, number of lines per page, number of letters per line in each page, etc. Alphabetical catalogue does not provide academic details needed by the scholars.

iv) **Tabulated Catalogue or Catalogue in Tabular Form**: Descriptive catalogue gives the detailed description of the manuscripts. The manuscripts are classified according to a pre-determined standard classification code such as DDC, CC, UDC, etc. The information is ordered and tabulated under separate column/heads. Yet there is no comprehensive description of the manuscripts mentioned in this catalogue. Fourteen points of tabular catalogue are: accession number, descriptive catalogue number, title, subject, author, collection, language, date, size, script, lines scribe folio and letters (Nandi, 2010, p. 28). Lalitha (2010) gives a more exhaustive list such as serial no., subject, collection no., title, author, commentator, script, language, size, number of folios or leaves, line per page, number of letters per line, extent, condition, date, beginning, ending and colophon. Extracts of manuscripts are also provided as in the case of GOML, Chennai.

v) **Tabulated Descriptive Catalogue**: A committee constituted by the Government of India has devised a proforma for the descriptive catalogue of manuscripts in all Indian languages and since 1961 this type of catalogue is published in India. This model of catalogue has a tabular arrangement

consisting of eleven vertical columns of manuscript descriptors such as beginning and ending lines, colophons, etc. The Government made it mandatory to use this format for obtaining grant of the expenses for the compilation and publication of manuscript catalogues, and so, a good number of institutions have since been using the model. In fact, this form of the catalogue is easier to refer to than the old type catalogues where the information is spread out.

Column 1: The main and sub-headings are recorded here. The main heading is printed at the left and right top corners of the pages, so that identification of the subject of the collection is made easy.

Column 2: The accession number as given by the institution is entered here.

Column 3: This column is meant to describe the nature of the work. If the work contains the text of the author, it is mentioned as 'text'. If the work is a commentary on the work of another author, 'commentary' is mentioned and when there is both text and commentary 'text and commentary' is recorded. If the commentary is given a title by the commentator, then the title or the name of the commentary is to be mentioned.

Column 4,5: The name of the author and/or commentator are recorded here. If there are any alternate names/aliases of the author and identification, they must be also recorded.

Column 6-8: The material or medium, script, size of the manuscript (in LxB), number of folios or leaves, lines per page and number of letters per line.

Column 9: The extent of the work. In other words, the actual length of the work is specified here.

Column 10: Condition and age of the work. If the manuscript is dated, the date must be recorded here.

Column 11: This is the notes section, for mentioning additional particulars. The unique features relating to the text like the 'source', any details about the author, etc., are to be recorded first. After that, the unique features such as illustrations, name of the scribe, owner or patron, its uniqueness, the

availability of manuscripts of the work in other libraries and details of at least one edition of the work if it is available in print, are to be noted.

The Note of Government of India gives a very valuable suggestion of adding an appendix to each volume of the manuscript catalogue. It states "this Appendix on rare manuscripts which have been indicated by letter "E" under column I should include extracts of the beginnings end and colophons, as also any other extract of exceptional significance from the manuscripts, and lists of authors, works etc., cited".

The tabular description consisting of eleven vertical columns including additional particulars, i.e. beginning and ending lines, colophons of select manuscript is easy for consultation as the data is classified in specific columns. Tabular catalogue will be very helpful to the scholars if the extract of the manuscript is also included in the catalogue. But sometimes this extract is recorded in a different volume. This is also not helpful. The extract must be noted at the time of accessioning, just after the tabular description. Colophonic remarks are important for socio-cultural study and for critical study of the manuscript. Generally post colophon remark, name of the scribe are neglected while preparation of catalogue of manuscripts. It is ideal for retrieving data from the catalogue.

vi) **Descriptive catalogue**: This is an exhaustive and elaborate catalogue that provides complete physical description, post colophons, select portions from the text, notes on authors and works, etc. Twenty points of descriptive catalogue are: name of the manuscript, subject, author, commentary and commentators, script, substance, accession number (old and new), condition (complete or incomplete), number of folios missing, extent, number of leaves, number of lines number of letters, size, date, description, beginning line, ending line, colophon, post colophon (if any) and reference (Nandi, 2010, p. 28).

Descriptive catalogue offers information about the beginning and ending of the text and other information. Preparing a detailed descriptive catalogue of manuscripts is very time consuming and laborious process. Even searching a particular data in a spread out descriptive catalogue demands time and effort.

Descriptive catalogue is important for understanding particular manuscript both from the point of view of a manuscriptologist as well as an academic scholar.

According to the NMM website, a Descriptive Catalogue has three parts – a) Physical Description, b) Catalogue Description, c) Publication. The website mentions that a scholar requires these three parts when he/she takes up any manuscript for research or critical editing, but when a cataloguer prepares the catalogue upon direct consultation with the manuscript, the catalogue description is not necessary. The cataloguer may also give information of copies of a manuscript available in other repositories.

Physical Description: 1. The name of repository or institution, 2. Serial No. or Record No., 3. Title, 4. Other Title, 5. Author, 6. Joint Author, 7. Commentary, 8. Scribe, 9. Scribe & Place, 10. Script, 11. Language, 12. Status: Complete/Incomplete, 13. Condition of manuscript, 14. Subject, 15. Material, 16. No. of Folios, 17. Missing Folios, 18. No. of Syllables (aksaras), 19. No. of lines in a page, 20. No. of letters in a line 21. No. of Granthas, 22. Length/Width, 23. Illustrations, 24. Reviser/Translator/Reviser of commentary, 25. Beginning Line, 26. Ending Line, 27. Colophon, 28. Post Colophon, 29. Contents, 30. Remarks

Catalogue Description: 1. Title of the catalogue, 2. Cataloguer/Editor, 3. Special Collection, 4. Year, 5. Serial No., 6. Volume, 7. Part No., 8. Bundle No., 9. Manuscript No., 10. Library Acc. No.

Publication Details: 1. Title, 2. Editor, 3. Translator, 4. Translation 5. Language, 6. Publisher, 7. Place, 8. Year

vii) **General register of works**: It is prepared based on the catalogues of manuscripts already available. It contains short information on author and title with source of availability of manuscripts and so, it is helpful in tracing the manuscript but does not provide scholarly inputs to the researcher. It is sometimes also referred as *catalogus catalogorum*.

Apart from the above, Lalitha J (2010) mentions three other catalogues of manuscripts maintained in a repository.

1. **Card Index**: Generally manuscript custodians use card indices. But this is an outdated practice after the advent of Online Public Access Catalogue

(OPAC). The fields usually present in a card index as mentioned on the NMM website are: 1. Title 2. Author, 3. Collection of manuscripts, 4. Commentary, 5. Commentator, 6. Condition of manuscript, 7. Substance, 8. Status, 9. Language, 10. Script, 11. No. of folios, and 12. Subject.

2. **Accession Register**: This is the master record of every bibliographic item in the library. In a way it is also a kind of a catalogue. Based on the accession register, alphabetical catalogue may be prepared author wise, title or subject wise. The recommended columns in the accession register are 1. Title, 2. Author, 3. Commentary, 4. Commentator, 5. Language, 6. Script, 7. Date of manuscript, 8. Scribe, 9. Bundle No. and Manuscript No., 10. No. of Folio, 11. Size of manuscript, 12. Substance, 13. Status (Com/Incom.), 14. Illustrations, 15. Missing Portion, 16. Condition of manuscript, 17. Subject, 18. Name of repository with address, 19. Call No., 20. Class No. 21. Remarks.
3. **Triennial Catalogue**: that which is published once in three years about the newly collected material in the last three years as by GOML, Chennai.

The technical description of a manuscript should include the following: the title, language of the text, date or approximate date, actual number of leaves, number of columns and average number of lines in each pages. New findings include information on the country or place and style of writing, on the scribes and annotators, binding, boards, opening words, closing words, subject, name of the donor, substance, etc.

3.1.4 Rules for Writing Entries in a Catalogue: The NMM has standardized the cataloguing format of fields and subjects, diacritical marks in Roman, Arabic/Persian scripts and developed the National Electronic Catalogue of Manuscripts titled Bharatiya Kriti Sampada. According to these standards, the information must be written either in the Roman script or in the native script of the manuscript such as Devanagari or other regional language. But when Roman script is chosen it should be written using diacritical marks. It should be written in Pratipadika (mula) or without vibhaktyanta in the standardized catalogue format for greater comprehension i.e. 'Gitagovinda' not Gitagovindah or Gitagovindam or Gitagovindamu or Gitagovind etc. For recording any variation in regional or national languages, the remarks field

should be used. The regional variations of pronunciation and writing of letters such as ba/va, sha/sa, ta/tha etc. should be avoided.

3.1.5 Fields of Catalogue:

The various fields of a descriptive catalogue are described here (Lalitha, 2010, pp. 256–257).

a. Record No: the serial number of manuscript of the collections, which starts from 1 and enlists all the manuscripts in the collection serially.

b. Address: The complete postal address of the institution or individual who owns the manuscripts.

c. Title: A name given in the text.

   a. The title should be as written in the manuscript.
   b. It is found either at the beginning of the text or in the colophon.
   c. If not able to find out the name of the text then fill 'unknown'
   d. Alternative title or parallel title, if any, must also be noted.
   e. If title is not available a few lines from the beginning and end of the text should be included in 'Remarks'.

d. Author: The author name may be found at the beginning or at the end or in colophon of the text.

   a. If the name is not found, write 'unknown'.
   b. Any information about the author can be written in 'Remarks'.

e. Joint Author: Person/s jointly responsible for the content of the text.

f. Commentary: The notes explaining or interpreting a written text/document.

   a. If more than one commentary, it must be mentioned.

g. Commentator: The person responsible for interpreting the content of the text.

h. Language: language in which text is written.

i. Date of Manuscript: Date of creation of the manuscript by scribe/writer.

   a. Here date refers to the period when a particular manuscript was put to writing.

b. The date may be available in post colophon.

c. If date is not found, write 'not available'.

d. The website of NMM provides a table for easy conversion of Indian dates to Common Era (CE):

1.	Kaliyuga samvat	– 3101 or 3100 = CE
2.	Veeranirvana samvat	– 487 = CE
3.	Maurya samvat	– 320 = CE
4.	Caitradi Vikram samvat	– 57 = CE
5.	Saka samvat	+ 78 = CE
6.	Kalichuri samvat	+ 248 = CE
7.	Gupta samvat	+ 320 = CE
8.	Gangeya samvat	+ 570 = CE
9.	Harsha samvat	+ 606 = CE
10.	Kollam samvat	+ 824 = CE
11.	Newar samvat	+ 878 = CE
12.	Chalukya Vikram samvat	+ 1075 = CE
13.	Lakshmana Sena samvat	+ 1118 = CE
14.	Shahur san	+ 599 = CE
15.	Uttari Phasali san	+ 592 = CE
16.	Dakshini Phasali san	+ 590 = CE
17.	Bengali san	+ 593 = CE
18.	Magi san	+ 638 = CE
19.	Ilahi san	+ 1555 = CE
20.	Rajyabhisheka samvat	+ 1674 = CE
21.	Hizri san	+ 622 = CE

Table 3.1.: Conversion table for Indian dates

(Courtesy: NMM website)

j. Scribe: The person who has written the copy of the manuscript.

a. Scribe may differ from the author.

b. Scribe's name usually given in the post colophon.

c. Sometimes scribe advises readers how to use the manuscript; how to protect, etc.

k. Subject: Refers to the topic/theme of the text.

l. Colophon: Ending part of the text.

a. Contains name of the author, scribe, text, date of composition, etc.,

b. The purpose for which the scribe wrote, date, handling of manuscript, preservation and conservation of manuscript, etc.

m. Folios: the number of folios within a manuscript.

a. Number of folios can be different from its pagination. For example if a manuscript has folios from 1 to 60; if folios 5-10 are missing, then the number of folios in the manuscript are 54 only.

n. Size of manuscript: Height X width in centimetres.

o. Material: Manuscript is made of palm leaf, paper, birch-bark, etc.

p. Illustration: pictures or diagrams that accompany the text.

q. Status: if the text is complete write 'com' or 'complete'.

a. If incomplete 'Inc' or 'Incomplete'.

b. If some folios are missing, but beginning and ending exist, it is also incomplete.

r. Condition: 'good', 'bad', 'worm eaten'. 'brittle', etc.

Complete/Incomplete Manuscripts: The complete manuscripts are those manuscripts which are available with full text and without any damage to the text on it or to the material of the manuscript. On the other hand, if there is some loss or damage to the text on it or to the material of the manuscript then they are grouped into 'Incomplete Manuscripts'. (Balakrishna, 2011)

Procurement of Manuscripts: The methods used by the libraries for Procurement of Manuscripts in general are (1) By Cost, (2) By Transfer and (3) By Donation. The management of the library may use any one method or any combination of the above three methods for.

Nature of Access: to the Manuscript Collection in Sample Libraries may be divided into Open Access and Closed Access. The management of the library may use either Open Access or Closed Access or the combination of the two methods for Accessing of Manuscripts by the users.

Arrangement: The manuscripts may be arranged Scheme wise, Accession Number wise, Subject wise, Language wise, Period wise or any other method the management of the library feels fit for their purpose. (Balakrishna, 2011).

The 2006-07 Annual Report of NMM recommends the following fields for MSS cataloguing and documentation: 1. Name of the Repository: Center where the collection is found, 2. Record No.: Serial number of the manuscript, 3. Title of the Text: Name of the Text, 4. Other Title: The other name by which the text is identified, 5. Author: The person responsible for the intellectual content of the manuscript, 6. Commentary: The kind of note, explanation & interpretation, 7. Commentator: The author of the commentary, 8. Scribe: The person who has shaped the text with his own handwriting, 9. Language (of Text, commentary and Sub-commentary): The language of that particular text, commentary or sub-commentary, 10. Script (of Text, commentary and Sub-commentary): That particular sign or symbol recognized by a constitution or society representing a language in which the text is found, 11. Complete/Incomplete: Refers to the completeness or incompleteness of a text, 12. Material: Refers to the hard substance which contains the manuscript, 13. Subject (With multiple choice of Sub. 1 & 2): Refers to the topic/theme of the text, 14. Bundle No.: Refers to the bunch of manuscript/s, 15. Acc./Manus No.: The specified technical numeric number, 16. No. of folios: The number of folios in a manuscript, 17. Pages: Number of folios in a manuscript, 18. Missing portion/folios from the manuscript: Refers to the portions/folios that are lost from the manuscript, 19. No. of illustrations decorating the text: Refers to the no. of the illustrations that are used in a pictographic or diagrammatic format to explain or decorate the text, 20. Condition: Refers to the physical condition of a manuscript, 21. Source of catalogue: This is redundant, since manuscripts are directly referred to in a stack. However, one may mention source of catalogue as a helping source, 22. Size: Refers to the length and width of a manuscript, 23. Remark: Any additional relevant information to note.

3.1.6 Other Important Points to Remember while Cataloguing:

Mitali Chatterjee (2010) describes some important points to keep in mind:

1. Manuscripts of texts in different languages must be catalogued in different volume. Then the catalogue must be classified under different subjects. Each descriptive catalogue followed certain subject classification.

2. Sometimes the descriptive catalogue does not include the index. A catalogue without index is also difficult to consult.

3. Editors of text utilize the descriptive catalogue. Critical editing of text requires first collection as many as possible numbers of copies of work. In certain case where only one copy of manuscript is available, critical edition may be prepared but it poses various problems. A critical editor requires the physical condition of the manuscript, its script, the complete or incomplete information, it age, purity of the text as well as legibility of the writing etc. The extracts of the text i.e., beginning, ending, colophon, etc., will help to work with particular manuscript. When one scholar starts editing an unpublished text, he requires more detailed information as no other source to trace the information is known to him. The Colophonic remark is important for socio-cultural study and critical study of the manuscript.

After studying these aspects of the catalogue of manuscript, it is clear that the tabular description of catalogue as suggested by the Government of India Committee with proper recording of extract is very useful. At the time of accessioning, extracts must be noted. Post Colophonic remarks must not be neglected and proper care to record the relevant portion must be taken. In tabular form the notes must be properly recorded in 'Additional particulars' or in comment section. Extracts must be recorded in same volume. This type of descriptive catalogue in tabular format with well arranged index will serve the purpose of retrieving data from the catalogue with least difficulty and in no time (Chatterjee, 2010).

To prepare a catalogue of a manuscript library, the special features of such repository are to be kept in mind, viz.:

1. The fifth law of library science does not have much relevance for the manuscript library as the rate of growth of this library is very low.
2. There can't be any comparison between the frequency of readers visiting a printed book library and that of a manuscript library. Only specialized scholars and researchers make use of the manuscript library where the number of users is often very limited.
3. The manuscripts cannot be browsed near the storage shelves because of the nature of manuscripts and for the care one has to take in handling them.
4. The manuscript catalogue should provide complete bibliographical description so that researchers get to know about each manuscript and its content. The cataloguer must prepare the catalogue keeping in mind that various types of

users like text finder, palaeographer, artist, historians, etc., take interest in the manuscript collection and so the catalogue should be prepared accordingly.

5. While the card catalogues have become outdated, the custodian institute should prepare manuscript catalogues both as a printed catalogue as well as online public access catalogue, apart from the regular library accession register. Standard size set for the printed catalogue is royal octavo. Every manuscripts library issues its catalogue in print. It is imperative that the catalogues of all manuscripts libraries must be available to other manuscript libraries and also to scholars and researchers. If the acquisition is low, supplement may be issued.

3.2 Deterioration of Manuscripts: Factors and Preventive Methods

The homepage of the Memory of the World project points out several factors such as war and social upheavals, lack of resources, looting and dispersal, illegal trading, destruction, inadequate housing and funding as the prime reasons for the permanent vanishing of or at least endangering of the heritage material across the globe (UNESCO, 2017). A report released by the Information Society Division of the UNESCO points out causes of deterioration in respect of various kinds of documents. It notes that 'historic books and manuscripts are decaying or being destroyed by war and natural disaster. Acid paper is a problem with many modern textual publications. The Vinegar Syndrome is destroying films. Machine obsolescence is causing major problems for holders of audio and video material' (Abid, 2011, p. 2).

The factors responsible for the deterioration of manuscripts can be categorized into 1) Natural Factors and 2) Human Factors. Within the natural factors there are organic and inorganic factors. The climatic and environmental factors consisting of light, temperature and humidity along with dust and other pollutants together with natural disasters fall under inorganic factors which are major factors responsible for the deterioration of manuscripts. Biological factors which include rodents, insects such as silver fish, cockroaches, book worms, termites, fungi (also called moisture pest), etc., are the organic factors. They secrete various kinds of organic acids, enzymes resulting in the discoloration and pigmentation of the archival materials. Human Factors which are in fact more responsible for loss of manuscript heritage include mishandling /negligence, vandalism, arson and looting.

3.2.1 Effects of Humidity:

Owing to the vast geography, India has a wide range of climatic conditions ranging from the mountainous terrains and coastal regions that have high humidity, humid sub-tropical and tropical wet regions, dry lands and semi-arid and arid regions. Uncontrolled humidity and temperature can cause significant deterioration of the manuscripts. Change in the temperature and relative humidity not only affects architectural timber of a manuscript custodian center outwardly, producing cracks in structures, it also affects the delicate manuscripts too as they contract and expand with changes in relative humidity and temperature in the atmosphere. Sometimes manuscript folios are pasted on board or some other support material to strengthen it, which crack apart when the board expands or contracts (Agrawal, 2006). Further, if the paper manuscript looses moisture, it becomes dry and brittle and if it soaks moisture, it becomes susceptible to mold, fungus and further to insect infestation. Most of the chemical and biological reactions that affect the manuscripts including foxing on paper, water stains, warping of wooden boards placed on either side of the manuscript bundles, cleavage, cracking, flaking of paint in paintings in illuminated and illustrated manuscripts, degradation of leather, parchment, biological growth etc., are due to uncontrolled humidity.

Relative humidity is directly related to temperature. We cannot control/change relative humidity without considering/changing the temperature. RH can be reduced or increased by increasing or decreasing the temperature respectively.

A room heavily loaded with hygroscopic materials such as wood, paper, and textiles buffers its own climate so well that no further control is required.

3.2.2 Effects of Light:

Light causes the most obvious and recognizable form of damage that is fading of the inks. Atmospheric pollution, both natural and man-made, darkens some pigments, especially lead pigments (Agrawal, 2006). Manuscript paper, the cloth used to wrap it, leather, photographs, and media such as inks, colorants, dyes, and many other materials used to create objects and art are all affected by light. Light consisting of ultraviolet radiation (UV) interacts and damages the physical and chemical structure of materials by providing energy to fuel the chemical reactions that lead to deterioration. Long exposure to intense light leads to fading or changing colors in

dyes and colorants. Ultraviolet radiation leads to weakening, bleaching, and yellowing of paper and other organic materials. These changes can diminish readability, affect the aesthetic appreciation of artwork, and impact access to the information. Even if a faded photograph is stored in the dark, it will not return to its original appearance and will continue to fade when taken out again as this damage is cumulative and irreversible (Pande, 2019).

If the collection is showcased in a frame, an ultraviolet filtering screen is to be arranged between the frame and bright light. The manuscripts are to be kept only in archival quality acid free containers for permanent storage. Documents may be treated with acid-neutralizing chemical agents, as needed (Roy, 2010).

Sunlight, temperature and humidity are the enemies of all old documents. Unless they are kept in a stable storage environment free of excess fluctuation in temperature and humidity their fine condition cannot be maintained. The storage area must provide only limited contact with circulating air and reduced luminosity and for this, a dry and cool place is to be selected. A general thumb rule is that any room suitable for human habitation will generally be suitable for the preservation of manuscripts. Manuscripts should not be left in the basement or attic, where change of temperature and humidity occur regularly and can cause deterioration (Biswas, 2003).

3.2.3 Acidity in the Paper: The paper manufacturing process of 19th and early 20th century involved washing the paper pulp with acids so as to enhance the brightness of the paper. This resulted in acidic residues to stay put in the manufactured papers which is responsible for the brittleness and yellowishness of the paper after a few decades.

Hans Peder Pederson (1975) cites three main reasons for deterioration owing to acidity in paper: First is the alum that was used in the production of paper in the 19th century owing to great demand of paper particularly Europe. High relative humidity and a high temperature activate the alum to decompose into sulphuric acid and aluminum. The second reason is oxidation by iron-inks. He says if paper-fibers have once been broken down, there is so to speak no way back - the cellulose is decomposed and the fibers have become hard and brittle - a material that easily disintegrates to dust. stop a further migration of the ink-acid to the healthy surroundings i.e. fibers not yet being in con- tact with the ink. This can be done in two

ways: The first one is to keep the material as much chemical inactive as possible until treatment. The temperature must be kept at a low level - (about 15° Celsius) - and the relative humidity must be kept at about 50% $ 5%. The second way is to deacidify and to create a buffer to prevent a further break- down. The third problem of acidity in paper arises from the pollution of the surroundings.

3.2.4 Biological Factors:

One of the biological factors, viz., the insects devour a variety of materials, especially wood and paper. Though fungus attacks almost all types of manuscripts, interestingly it is noted that it does not attack birch bark. OP Agrawal cites an instance where a birch bark manuscript was repaired using paper and after some time, due to improper care the repaired manuscript was attacked by insects which destroyed only that portion of the manuscript that had been repaired using paper, whereas the rest of the birch bark was left intact. OP Agrawal wonders whether birch bark itself is an insect proof material, and could it be used to help conserve manuscripts? (Agrawal, 2006 p. 7).

Integrated Pest Management (IPM): To arrest the infestation an integrated strategy known as IPM is to be adopted. IPM consists of five concerted and mutually complimentary efforts that include 1) Exclusion 2) Monitoring 3) Identification 4) Treatment and finally, 5) Evaluation.

While natural conditions and biological factors certainly play a significant role in the degradation and deterioration of manuscripts, more concerning are the human factors that include improper storage, incorrect handling and careless transportation, which damage our cultural property even more. (Sah, 2006).

How did manuscripts written centuries ago survive till date without any noteworthy human intervention in mutts and temples? Roy (2010)explains: ‘Like most old things, the ancient books and leaves that have survived the attrition of the centuries have done so because they were purposely cared for. Thus they tend to be found in surprisingly fine condition. Old paper is made of a durable mixture of natural plant fibres that were not exposed to harsh Industrial Age chemical finishes. Thus they are not found embrittled or badly discoloured. He further points out that manuscripts written on ‘ancient vellum is also extremely durable and survives in fine condition, though all old skins exhibit natural variations in tone and colour’ (p. 241).

Preservation of manuscripts is a serious issue for the Librarians, Information Scientists and Archivists. There are several dangers to manuscripts from insects or due to tearing by use of rough handling. It is of utmost importance to repair these damages at the moment of their identification. The preservation of manuscripts follows traditional as well as modern methods, which are scientific and preserve documents for further use. In the traditional system of preservation, herbals are used such as neem leaves, aswagandha leaves, dried ginger, kumkum fruit power, sandal wood, turmeric powder, garlic, etc. In case of modern methods suitable chemicals are used for preservation.

3.3 Conservation, Preservation and Restoration:

Though the terms conservation, preservation, are used interchangeably in common man's language, they have different connotations in the professional parlance. Raval Vismay notes that 'The deliberate act of keeping cultural heritage from the present for the future is known as Preservation (American English) or Conservation (British English), though these terms may have more specific or technical meaning in the same contexts in the other dialect' (Raval, 2016). Apart from the two popular terms conservation and preservation other terms such as 'restoration', 'preventive conservation', 'curative conservation', 'rehabilitation', 'redevelopment', 'anastylosis' etc., are also used to describe various nuances in the conservation science.

3.3.1 Preservation: This term had different connotations during different times in the last hundred years itself. In the early years of modern archiving for the agencies that were set up before the World War II, 'Preservation simply meant collecting. The sheer act of pulling a collection of manuscripts from a bam, a basement, or a parking garage and placing it intact in a dry building with locks on the door fulfilled the fundamental preservation mandate of the institution' (Conway, 2000).

Pearce-Moses (2005) defines preservation as a 'branch of Library and Information Science concerned with maintaining or restoring access to artifacts, documents and records through the study, diagnosis, treatment and prevention of decay and damage'. The glossary entry further adds, 'Preservation is a professional discipline of protecting materials by minimizing chemical and physical deterioration and damage to minimize the loss of information and to extend the life of cultural property. It is an act of keeping from harm, injury, decay, or destruction, especially through noninvasive

treatment'. Adding further, it says 'preservation is the obligation to protect records and other materials potentially relevant to litigation and subject to discovery'.

Singh et al (2010) give a lucid description of what constitutes preservation and how it differs from conservation. Pointing out that it is an indirect method of treatment that focuses on changing the environment around the object, they state: 'Preservation refers to the totality of process and operation involved in the stabilization and protection of documents against damage or destruction and in the treatment of damaged or deteriorated documents' (p. 265).

IFLA (*Principles for the Care and Handling of Library Material: International Preservation*, 1998) has defined preservation as 'an interconnected thread of many strands which includes all the managerial and financial considerations, including storage and accommodation provisions, staffing levels, policies, techniques, and methods involved in preserving library and archival material and the information contained in them.'

3.3.2 Conservation: Conservation is a term, which embraces three closely related ideas, 'preservation, protection and maintenance'. The term 'conservation' is derived from the Latin word '*conservare*', meaning to keep, to 'conserve'. Singh et al (2010) describe conservation as 'a direct method of treatment in which the item (read object) is physically or chemically changed. This includes cleaning, de-acidifying, repairing, rebinding and reformatting. Digitization in which computerized representation of printed analogue is created using digital image technology can act as a facilitator in conserving manuscripts' (p.266).

The International Institute for Conservation of Historic and Artistic Works defines conservation as: 'All (those) actions aimed at the safeguarding of cultural property for the future. Its purpose is to study, record, retain and restore the culturally significant qualities of the object with the least possible intervention.'

The above definitions make it amply clear that conservation is purely a scientific and technical subject. The basic philosophy of the conservation is that "the object should be strengthened rather than repaired, repaired rather than restored and addition and renovation should be avoided to give equal respect to tangible and intangible factors" (Bisht, 2003). The tangible and intangible factors include historical, aesthetic, technical associations, sacred aspects and maker's intentions (Raval, 2016).

American Council of Learned Societies (ACLS) succinctly describes the ambit of conservation thus: 'the area of conservation commences with the creation of text, extends to publication thence to acquisition and then storage in the library for access and use'("Conservation," 1975). This means, Panage (2003, p. 36) points out, 'conservation concerns with authors, publishers, librarians and readers. But of all of these stakeholders, librarians have more responsibility of preserving the heritage content enshrined in the form of manuscripts.

3.3.3 Restoration: The term conservation is two folded i.e. preservation and restoration. In preservation, preservative measures are taken to stop or to check or retard deterioration, and in restoration, special treatment is to be given to the reading materials in order to bring them back to their original shape.

Restoration is a technical area and needs special skills, which may not be possible for every librarian to possess it. The library material is handled either by the library staff or the users (Panage, 2003).

Li and Niu (2010) describe three principles followed by Chinese libraries in restoring the ancient books: "*Originality*: preserve the original look and feel of ancient books; *least intervention*: make the restoration procedure as simple as possible and *reversibility*: when new restoration technique appears, ancient books can be reversed to its original status and then be restored using the new technique" (2010, p-272).

The definitions as given by the International Federation of Library Associations and Institutions (IFLA) sum up the distinction between preservation, conservation and restoration (Harvey, 1993, p. 6):

Preservation: Includes all the managerial and financial consideration including storage and accommodation provisions, staffing levels, policies, techniques and methods involved in preserving library and archive materials and the information contained in them.

Conservation: Denotes those specific policies and practices involved in protecting library and archival materials from deterioration, damage and decay, including the methods and techniques devised by technical staff.

Restoration: Denotes those techniques and judgments used by technical staff engaged in the making good of library and archives material damaged by time, use and other factors.

Christopher Clarkson compares 'preservation' to ‘preventive medicine’ (Clarkson, 1987, p. 236) and distinguishes the terms conservation, preservation and restoration by relating them to the extent of operations applied to an item; restoration implies major alterations, conservation minimal and preservation none.

Preservation is a broader term than conservation and is a management process; conservation is a technical and / or craft process. Conservation means the protection and wise use of our natural resources. Conservation means guarding these resources so the greater number of people may use them wisely (Panage, 2003).

Raval (2016) is right when he comments on the state of conservation practice in India, that ‘many of the persons engaged with conservation practice are make shift conservators by just few seminar, workshop or training’. Owing to this reality, he points out, ‘every now and then, the questions on the quality of the conservation work at different places on same kind of objects can arise, as the aim of the purpose is same but there is a lack of uniformity in work’ (p. 207).

Quoting Bisht (2003) he says owing to lack of adequate knowledge, training and ensuing skill many a times the conservators meddle with the object more than required in the name of conservation, ‘thereby changing its aesthetical or/and historical or/and technical or/and maker’s possible intention (e.g. size, shape, storage style, shine etc.), which may not be acceptable by the research scholars, art historians or senior conservators’ (Raval, 2016, p. 207).

To bring uniformity and avoid unwarranted intervention, he points out, ‘a sound policy on conservation is required, ratified at higher management level by consulting other senior professionals in the field, adopting internationally set standards and working ethics, and bring uniformity in conservation work. Clear guidelines help the conservator/restorer to know how far to go and when and where to stop. After all, the conserving the manuscripts is our promise to the ancestors and commitment to the future generations (Raval, 2016, p. 207).

Our libraries lack trained personnel in conservation. Panage (2003) quotes E. W. Browning in his thesis and says, ‘Libraries have asked for and library schools have trained assistants in book selection, in cataloguing, and classification but not in conservation and preservation’ (p. 36).

3.3.4 What is to be conserved: Content, Artifact or Both?

Often a debate ensues in the conservation circles whether the aim is conservation of the knowledge embedded in the manuscript or whether the physical form of the manuscript is also to be conserved. If the objective were only the conservation of content or the intellectual property, then mere photocopying or microfilming, digitizing or even reading the text onto a cassette tape will suffice. Though this may be sufficient for ordinary library collections, it not the case in respect of manuscripts. It is to be kept in mind that often the manuscript has cultural, historical, aesthetic, religious and research value owing to its construction, material used and design, fame of the author or scribe, etc. Although microfilm or a digital copy of a newspaper may all that is required for a typical user a newspaper or printing historian will be more interested in such things as paper quality and size of the page which can only be derived from the physical objects themselves. It is therefore important to conserve at least a sample of the artifact for future reference. If, the manuscript is to be conserved with all its physical properties it requires adoption of several conservation procedures such as paper deacidification, strengthening the paper (called sizing) refurbishing its binding and encasing it in a custom made archival quality box (Panage, 2003).

Harvey Ross (1993, p. 137) describes preservation techniques for both artifact, as well as the intellectual contents which are also enlisted by Panage (2003, pp. 59–60) in his thesis.

Preserving the artifact (Physical): 1) Refurbishing and collection maintenance 2) Fumigation 3) Preparation of protective enclosures consisting of a) Encapsulation b) Phase (Phased) boxes c) Other Boxes, d) Document folders e) Slipcases f) Shrink-wrapping 4) Binding consisting of a) Recessing b) Sewing through the fold c) Double-fan adhesive Binding d) Over sewing e) Other binding methods and f) Strengthening paperbacks.

Preserving the intellectual content: Reformatting consisting of a) Photocopying b) Microfilming c) Photography [Film] and d) Digitization.

3.4 Conservation Practices:

Conservation of heritage material is a two pronged strategy in which factors of deterioration are controlled and their negative effects on the objects are nullified. There are two kinds of conservation practices adopted in the modern manuscript

conservation laboratories established in various manuscript conservation centers. They are 1) preventive conservation and 2) curative conservation. All those activities that impede progress of process of deterioration and creative conducive conditions for extending the life span of manuscripts and other heritage material are called preventive conservation. On the other hand those reversible efforts which try to repair the damage already done to the manuscripts and revitalize them through positive interventions thereby extending their life are called curative conservation techniques.

3.4.1 Need for Standard and Time Tested Traditional Conservation Practices:

Since the last century, chemicals are often used in conservation, many of which are toxic, costly and not easily available. Use of various chemicals to preserve the cultural heritage was blindly copied from the West, but their effect on the environment and human health was hardly ever considered in the past. Even the commonly used para-dichlorobenzene and naphthalene balls are toxic to some extent (Agrawal, 2006, p. 8).

Sah (2006) points out that of late, a new movement of returning to the traditional practices and medicinal plants in conserving the local manuscript heritage that are more easily understood and accepted in villages and small towns than the use of 'chemicals' is gaining ground. He points out that owing to the esteem the Indian tradition has both for the written and spoken words, 'many custodians of manuscripts prefer their sacred manuscripts not to be 'defiled' by the use of synthetic chemicals' (p. 2). We must remember that even though a vast number of our people are 'illiterate' the amount of traditional knowledge they possess even today is undoubtedly irreplaceable. There are several advantages with the traditional methods of preservation: Firstly they are not hazardous if not only minimally for human health, they are least invasive on the material being conserved and more importantly, they do not require much expertise, equipment and money.

With libraries and repositories already overburdened with large collections, there is now a movement to encourage and empower individual collectors in villages and towns to look after their manuscripts themselves (Sah, 2006, p. 2) instead of handing them over to a manuscript repository.

3.4.2 Traditional Conservation Practices:

The knowledge of preservation is not new to Indians. Our ancestors were quite aware about the effects of light, dust, heat and humidity on manuscripts. They devised and

adopted different indigenous methods for centuries for safekeeping their manuscripts and these practices are still being practiced even today. The nature's chemical factories, plants produce a wide range of phytochemicals, aromatic essential oils, alkaloids, etc., which have been recognized by our ancestors, since ancient times for their germicidal properties and insect repellence potentialities. All the traditional conservation practices fall under the category of preventive conservation. Some natural products, adopted by the custodians of manuscripts, are enumerated below (Sharma & Bala, 2010):

- Palm leaf manuscripts are seasoned by burying under the mud or boiling them in water or milk and applying turmeric paste before writing to save them from insects. The palm leaves are strung together with the help of a needle made of bamboo and a string of cotton or silk that pass through holes punched on the leaves to keep the leaves intact. The manuscript bundles are also kept in heavy wooden chests to reduce the rigours of changing climate. Palm leaves were kept in the kitchen lofts, as the smoke particles have the capacity to repel the insects, fungi or mildew. However, the smoke deposits bring in some undesired changes in the leaves. Lemon-grass oil coating is applied to strengthen the leaves of manuscripts and also destroy the growths of micro-organisms. Citronella oil was rubbed on palm- leaf manuscripts to increase flexibility and to deter attack by insect. Oil extracts of some natural products like black pepper, sandalwood or clove facilitate in the restoration of flexibility to the palm leaf manuscripts. Resin oil was applied on manuscripts as the strong aroma prevents silver fish from attacking the folios.
- Manuscripts are placed between two wooden planks and wrapped in red or yellow colour clothes to protect them from dust, insects and also to a great extent, from variation in atmospheric humidity and absorption of acidic fumes. The bundle is then tightly bound with a ribbon to exert an even pressure on manuscript, which press the leaves from both the sides, preventing curling at the edges and chipping by abrasion. The traditional belief is that red colour repels insects and yellow colour produced by turmeric possesses germicidal power. The bundles of manuscripts are also kept in heavy wooden chests to reduce the rigors of changing of climate. Silk clothes are also extensively used to wrap the manuscripts as silk is remarkably free from bookworms.

- Manuscript leaves are exposed to the tender rays of the rising or setting sun which destroys the traces of growth of insects and micro-organisms. Generally, manuscripts are exposed to the sun in the lunar month of Bhadrapada i.e., in August as the rays of the sun in that particular month are believed to be very favourable. The indigenous practice is to take out palm leaves on *Vijaya Dashami* day when they are cleaned and kept back.
- In some places underground cells are prepared for preservation of manuscripts, probably to save them from marauding invaders.
- When transporting a manuscript, a narrow cotton cushion with a strap is used to protect the manuscript from damage in transit.
- Agarwal (2006, p. 9) enumerates other indigenous insecticide traditionally used such as the neem tree, margosa, which has been used for millennia for its medicinal properties. Dried neem leaves and seeds are also useful in keeping away insects. Agarwal (2006) points out that the neem seed is more potent than the leaf and that the oil from neem tree is very effective for the conservation of wooden objects. Sharma & Bala (2010) explain: Neem contains limonoids, a class of compounds that acts as anti-feed ants or growth regulators in insects; they don't kill instantly but wipe out a whole generation of insects by preventing the young ones from maturing and adults from reproducing. Dried leaves from neem tree were placed between the cover of the book to deter booklice. As the wooden planks attached to the bundles of manuscripts are prone to insect attack, in some libraries the planks are made of neem wood which can ward off termites.
- Powdered roots of dried sweet flag are filled in small bags and are kept in cupboards of manuscripts as it has got very good medicinal value and insecticidal power. Agarwal (2006, p. 9) notes that *Ghoda bac* or sweet flag, has been used at the Oriental Research Institute in Baroda for more than three decades for the preservation of collections. Tobacco, black cumin, pepper, camphor, turmeric and other natural products have been commonly used since ages in India, so also fungicides such as the phenolic fumes of *ajvain,* carum.
- He argues that books of those children who put snake slough and peacock feathers with the belief that it would help them learn better in fact are

protected from insect induced damage. He wonders if this is because of the presence of a copper compound or a sulphate, in the colourful peacock feather or whether the snake slough is poisonous. Sharma and Bala (2010) offer an explanation to this: Peacock feathers contain aromatic accretions that are released by the peacock. Even when the feathers are detached, the residual aroma acts as insect-repellent. As regards to the snake slough they maintain, it is charged with an aroma liberated by male to entice the female which has insect-repellent property.

- Small packets of powder of dried leaves of aswagandha are kept with the manuscripts covered in clothes to repel insect attack. The mixture of neem leaves, karanja, nirgundi and citronella are also used. Similarly dried tambakhu leaves are packed in small cloth bags or spread on the shelves where manuscripts are kept. The nicotinic acid of the leaves keeps the insects away. Dried ginger is kept along with bundles of manuscripts to save them from insect attacks. In china, ginger root and stem are used as pesticides against aphids and fungal spores. The seeds of Black-Cumin or Kala Jeera are scattered at the manuscript storage area and strong aromatic smell keeps away insects.
- Kumkum fruit power, powdered ajwain also act as an insect repellent and fungicides. Fumes of ajwain obtained by its burning, has often been used as a fungicide and an antiseptic in Indian homes.
- Naga-damani bears an essential oil whose sweet aroma and insect repellent action helps to eradicate insects from the manuscripts.
- Mint and tobacco leaves in its natural form are used to repel ants and cockroaches.
- Sandal wood dust is commonly used as insect repellent. The dust is traditionally kept in cupboards used for storage of textile etc. It also acts as a humidity buffer.
- Camphor is commonly used in India to protect valuable documents. A mixture of camphor and cloves has also been used to repel insects from textile and manuscript collections. Moreover, synthetic camphor oil is also used to protect palm leaf manuscripts against insect attack. The smoke produced on burning

camphor oil has been found to be very effective as an insecticide and a fungicide. A mixture of camphor and clove has also been used to repel insects from textile and manuscript collections. Camphor mixed with coconut oil is smeared on the cupboards to repel insects.

- Khus roots and oil are both used as insect repellent.
- Canola oil is used to control insects. It repels insects by acting as an insect irritant. Lemon oil and tea tree oil are also effective insect repellents.
- Garlic exhibits antibacterial, antifungal and insecticidal qualities. Garlic oil spray also has fungicidal properties.
- Combination of acorus aclmus, cumin, cloves, pepper, cinnamon and camphor was used as an insect repellent for six months, though it had to be replaced after six months or so.
- Nirgandi is a shrub, after being dried in sun, the leaves are inserted between the bundles of palm-leaf manuscripts to keep the insects away.

Agrawal (2006) recommends exploring traditional materials and practices even for preparing adhesives, consolidants, detergents and cleaning agents for use in conservation. He provides some very useful tips: Flour paste becomes stiff after it has dried. Hence he suggests preparing a flexible paste by heating the milky fluid extracted from the soaked wheat grains. He further suggest use of tamarind seed paste which is weak and flexible which can be used as an adhesive as well as a consolidant in miniature and even wall paintings.

It is important to note that handmade paper has the natural durability for more than 400 years if stored and handled in good manner and some minimum preservation methods are maintained. The manuscripts are normally preserved by casing and boxing with an insect repellent inserted in the box which provides reasonable environment to let the manuscripts survive for considerably long period of time.

3.4.3 Modern Conservation Practices:

The conservation laboratories employ the following conservation procedures:

a. Charging and Discharging: The manuscripts are highly prized assets of any organization some of which could have high value in the international market. It is

very important that the conservator receive and return the manuscripts from the repository for treatment by duly recording the details of the manuscripts. The process of receiving and returning the manuscripts is called charging and discharging. The researcher has devised a charging and discharging format which is appended to the thesis. (Appendix D).

b. Photo documentation: As the manuscript bundle is opened for initiating any conservation activity, the first thing to do is to photo document the condition of the manuscript by taking a series of photographs as each folio is taken out. This will help the conservator to maintain transparency and showcase the condition of manuscript before and after conservation. If any manuscript folio is found fragmented as the manuscript bundle is opened, the fragment should be kept aside in a polyester envelope bearing the leaf number for attaching it in future or returning it to the custodian center for their information.

c. Pagination: Before separating each folio for physical examination and sending them for appropriate treatment, each leaf is to be numbered on the upper left/right corner with a soft pencil. This will ensure that the order and sequence of folios is not disturbed after conservation. Only pencil is to be used for marking or writing anything when working with or around archival collections.

d. Physical Examination: After receiving the manuscripts from the repository for conservation the manuscripts are examined closely for any apparent damage and signs of deterioration. A condition report of the manuscript is prepared describing the physical condition of the manuscript with suggested remedial intervention. The researcher has devised an exhaustive and comprehensive condition report after studying various condition reports available, which is appended as Appendix E. Depending on the remedial intervention determined by the conservationist as necessary, the following procedures are initiated.

e. Undoing defective old restoration: Often it is found that in the interest of repairing the damage, cellophane tapes are used to close the tear or plastic lamination of folios is done hoping that it would enhance the lifespan of the manuscript. In the modern view of conservation, all these are viewed as defective restoration procedures and so these are to be undone. Xyline, acetone, toluene or other organic solvents may be used to remove the sticky cellophane tape or other plastic material.

f. Removal of all undesirable material: The primary objective of curative conservation is to remove all material not intended to be present in/on the folios such as stains, dust, dirt, acidity, etc.

g. Methods of cleaning: Broadly speaking there are three cleaning methods adopted for manuscripts. They are:

1. Mechanical Cleaning: Consists of dry brushing and mechanical cleaning.

Dry Brushing: The manuscripts are dry brushed using a soft brush to remove dust, insect excreta, insect parts, larvae, eggs, etc.

Manual Cleaning: To remove mud and other physical deposits, surgeon's knife is carefully used to mechanically clean the manuscript of its defilement.

What not to be cleaned: Any mark potentially meaningful, such as signature, dates or artists inscription, any number, which may be some sort of inventory code, notes, remarks, etc (Gupta, 2019).

h. pH Test: The acidity of paper and ink is first tested using a pH strip. This is done by placing a drop of water on one insignificant corner of the manuscript and allowing it to absorb the acidic content if any, for about thirty seconds. Then a pH strip or pH pen is introduced into the water drop to test if the strip changes color towards red indicating acidic content. The pH color strip reveals the degree of acidity. A digital pH pen can display the acidity by displaying the numbers. While 7 is neutral, numbers tending towards 1 show the degree of acidity with 1 being highly acidic. Similarly the ink is tested for acidity and solubility at a place where the affect is not easily noticeable. If the ink or paper is found to be acidic then deacidification procedures are adopted.

2. Aqueous cleaning: Cleaning of manuscripts primarily using water is called aqueous cleaning. Aqueous cleaning is meant to remove water soluble stains, free acids etc., from the folios. Hot water is also sometimes used to clean hard stains. Sometimes detergents are also used in water but with caution. Washing should always begin with cold water. For some tougher stains, raising the temperature of the water can help. However, if it is too hot it will wash out more of the gelatin sizing which was widely used, turning the paper into something akin to blotter (Gupta, 2019). Conservators must be mindful of the risks in the use of distilled or de-ionized water, though it is prevalent in many conservation laboratories. Distilled water is ion hungry

and so it may also leach out beneficial ions, such as calcium and magnesium, from the paper, shortening the life. It is also found that washing with de-ionized or distilled water could cause a drop in pH and fold endurance. Hence adding desirable ions such as calcium or magnesium carbonates, which also act to raise its pH to neutral or mildly alkaline is suggested. This can be achieved by running the water through a column containing calcium carbonate.

i. Ink Solubility Test: Before embarking on any wet conservation procedures, the solubility of ink is to be first determined. If the ink spreads on the manuscripts when water is introduced, then ink consolidation is to be first carried out. If there are different colors of inks used, then solubility test is to be carried out on all the inks present in the manuscript.

j. Fixing of inks and colors: If the ink test reveals that the ink or other colors used in the manuscript are soluble in water, then the ink needs to be fixed with a temporary layer of chemical that acts as a blocking agent. This procedure is also called masking. The most common masking agents used are Polyvinyl acetate, PMMA, Microcrystalline wax, Cellulose acetate, Paraloid B72 (EMA:MA::70:30), Paraloid B67 (iBMA), etc. **Cyclododecane** is a volatile binding medium, a temporary fixer of water soluble paint during its aqueous interaction, which can be applied in molten state or dissolved in an organic solvent.

It is very important to remember that wet cleaning is an irreversible operation, and hence the methods should be used with caution to minimize adverse effects on manuscripts. Before cleaning identify what to remove and testing stability of inks and prints.

k. Wet Brushing: To remove water stains and other simple blemishes, the folios are wet brushed using 25% ethanol solution (one part of ethanol in three parts of distilled water). This will not only remove many stains but also helps in neutralizing the weak acidity and helps in softening the paper and remove brittleness. The manuscript folios are then allowed to dry in open place on their own. Alcohols like ethyl alcohol or isopropyl alcohol in water help faster diffusion of water resulting in better cleaning. It also reduces the chances of bleeding of ink/paint as it evaporates fast and reduces chances of water stains.

3. Solvent cleaning: We should remember that there is no universal solvent that is capable of dissolving all undesired stains and residues. Hence depending on the requirement, different solvents are chosen for cleaning the manuscripts.

l. Chemical Cleaning: There are primarily two chemical treatments employed in the conservation of manuscripts. They are 1. Deacidification/alkalization and 2. Bleaching.

m. Deacidification/Alkalization:

Deacidification is the application of alkaline agent to neutralize acid present in paper. Alkalization is the application of alkaline agents which react with the acids in the paper and leaves in paper an alkaline reserve. Capable of reacting with acids in future to resist changes in its pH, it is sometimes called buffer and the treatment buffering.

1. Aqueous Deacidification

- Washing: This is the simplest deacidification process that is uses water.
- Calcium hydroxide: If the acidic content is high CaOH is used.
- Barrow's Double method: One of the pioneers of using Barrow's Double method in treating the manuscripts is Hans Peder Pederson, who introduced the method in the Danish National Archives in 1967. He describes the Barrow's Double method as follows: 'If the material has to pass a deacidification process, it is to be decided which type of deacidification to make. If the Barrow double method is chosen, 1.5g of Ca $(OH)_2$ per liter H_2 0 + extra 0.5g of Ca $(OH)_2$ per liter to react with the free CO_2 (Carbon dioxide) normally dissolved in water. Material to be deacidified is submerged in this solution in twenty minutes. Afterwards excess fluid is pressed out, and the material is ready for the next bath. Wash out 2.O g of CaC03 per liter H_20 and bubble this solution with CO_2 in twenty minutes to make Ca $(HC0_3)_2$ (Calcium bicarbonate)'.

  'After the first bath the material is submerged in the next bath - this is the reason for the name Barrow double method. The material remains submerged for another twenty minutes, and then the thoroughly wet material is taken out of the bath and placed sheet by sheet on drying shelves to dry and thereby establish a neutral carbonate'.

- **Magnesium bicarbonate**: When the manuscript has very high acidic content and is very brittle, the folios are soaked in magnesium bicarbonate solution and then cleaned with running flow of ordinary water and dried.

2. Non-Aqueous Deacidification- Barium Hydroxide is used for non-aqueous deacidification.

3. Vapor-phase Deacidification- Using the vapors of Ammonium hydroxide, deacidification of manuscript folios can be carried out.

n. Bleaching

It is a chemical reaction that converts the stain to soluble or colorless compound. The conservator must keep in mind that bleaching is one of the most controversial treatments. The greatest disadvantage with bleaching is that it weakens the paper. Unless the blemish on the manuscript is very glaring or hampers the visibility of script, decision about employing bleaching agents must not be taken. The conservator must be very clear about the extent bleaching also. There are two kinds of bleaching agents:

o. Oxidizing bleaching agents:

Hydrogen peroxide: This is the most simple, effective and popular bleaching agent. The second level of bleaching agents are the Hypochlorite's of Sodium, Potassium, Calcium whose pH is greater than 10. Chlorine dioxide affects Lignin containing paper. After using the strong oxidants such as Chloramines T and B, it is important to wash the manuscripts for a prolonged period of time with normal water. Potassium permanganate is another oxidizing bleaching sometimes used.

Reducing Bleach: Sodium Borohydride, a reducing bleaching agent is to be sparingly used on the folios.

It is to be remembered that chemical treatments, however, are inherently controversial and are acceptable now only as treatments of last resort.

p. Treatment of Palm Leaf Manuscripts: In case the manuscripts are written on palm leaves, the surface of leaves is first cleaned with the brush and then the leaves are carefully cleaned on both sides with a lint free cloth soaked in lukewarm distilled water. But before starting this process, it should be ensured that the writing of the manuscript is incised and not surface written by testing a small area to ascertain

the stability of the writing. If water cleaning is possible, then leaves should be places between blotting paper to dry them fully (Nandi, 2010).

q. Fumigation: Para-dichloro-benzene is kept in an air tight fumigation chamber where loose folios are kept for fumigation and left for not less than one week and generally for twenty-one days to kill all insects in various stages of development, since most of the insects infesting books have a life cycle of twenty one days. After removing the manuscripts from the fumigator the leaves should be cleaned before keeping them back into their respective boxes.

r. Repair and support: It is highly important to repair the damages caused by insects or by rough handling without any time loss. The manuscript custodians must remember the adage that a stitch in time saves nine.

s. Preparation of adhesive: For mending the tears, holes and cracks, adhesives are needed. But a wrong adhesive could be an open invitation for the insects. Book worms and other insects feed on the gluten contained in the starch-based adhesive pastes. Hence specially prepared gluten free starch paste, or Japanese adhesive called Jin shofu, or methylcellulose is used for repairing the manuscripts. To prepare a stable adhesive, one and half teaspoonful (7.5 ml) of methylcellulose is added to one cup (225 ml) of distilled water and stirred till it blends completely and attains a jelly-like consistency. The solution is ready for use after leaving it undisturbed for about an hour.

t. Resizing: The fibres in the paper sometimes become very weak and begin to disintegrate. In such scenario artificial chemicals such as Klucel G or other consolidants are introduced to re-strengthen the folios. This process is called resizing.

u. For Palm Leaf Manuscripts: Subodh Gopal Nandi (2010) describes the method of repairing the palm leaf manuscripts. 'The palm leaves can be fixed to the surface with 5% solution of polyvinyl acetate in toluene. Then a piece of tissue (Tengujo or any other best quality) is to be covered the damaged area along with a small square of polyester film. The tissue is to be carefully pasted; the tissue laid into place on the palm leaf, and gently rubbed down through the film with a bone folder and after sometime the film is to be removed to allow the repair to dry' (pp. 212-213).

'Another repair technique is the use of tissue coated with a dry fish gelatine solution. This technique stresses that the tissue is to be laid dry over the dampened surface of

the damaged palm leaf, and pressed into place with damp cloth until firmly set. The advantage of this method is that repaired portion dry very quickly, adhesive does not have to be prepared, and adhesion is very strong' (p. 213).

'If a significant portion of the palm leaf is missing, a piece of Kitakata paper is to be carefully covered due matching the missing area, and tipped into place. It is then supported on both sides by the tissue in the manner noted above. Loose fragments of palm leaves are similarly secured in place in this fashion' (p.213).

v. Oiling:

The oiling imparts a smooth surface to the palm leaves and increases the flexibility of leaves. A thin coat of insect-repellent oils such as cedar wood oil is to be applied on the entire surface of leaves on both sides. A mixture of camphor, oil and citronella oil with alcohol in the ratio of 3:2 can also be used to oil the palm leaf manuscripts. Though the oil does not repair the leaf per se, it fills and blends with the leaf surface. After applying the oil, each leaf should be air-dried in constant air blow to avoid molding. For this, the leaves may be hung to a wire using spring clip. When the leaves are completely dry, the surface is softly wiped with a dry cloth and then the manuscript folios are re-strung, re-cased, re-boxed and re-shelved (Nandi, 2010).

3.5 Standards for Stocking and Transporting Manuscripts (Mamta, 2019b):

Manuscripts are found stored in various places such as museums, libraries, temples, and also in the cupboards of private ownership. Many objects get damaged and get deteriorated primarily due to poor storage conditions. Major part of the life of a collection is indeed, spent in storage, and so it is very important to have proper storage. Bad Storage conditions of the collection include high temperature, high humidity, big swings in temperature and humidity, direct exposure to light, uncleaned dirt and/or dust for longer periods, mold or mildew growth, storing manuscripts near heaters, wash basins, water pipes, exposure to pollutants or chemicals, etc. It has been found that improper handling and improper storage cause tremendous damage to the heritage collection.

The custodian centers must ensure that manuscripts are not stacked one over the other. They should take a critical view in respect of available space and whether proper utilization of space is optimally done, location, access to manuscripts, security, conservation measures, etc.

As regards to the stacking area of the manuscripts, it is recommended that first floor and North side direction is best for storage. Storage room should always have white washed so that the reflected ambient light makes object easier to see.

Several kinds of storage are necessary to house various records, manuscripts, reference books and other material in a manuscript center. Following are the various types of storage suggested for different purposes:

1. **Open Storage**: Archival records for open shelves storage
2. **Closed storage**: Suitable for smaller objects, control of environmental factor, additional accident protection,
3. **Visible storage**: Adjustable shelving, designed for collection, containing objects of varying sizes.
4. **Shelves:** This kind of storage arrangement is suitable for storing registers such as accessions registers, catalogues, dead stock register, Standard Operating Procedures and other such material that are regularly used.
5. **Vertical racks:** These are suitable for keeping reference books.
6. **Cabinets**: They provide the greatest protection from all risks, The cabinets can be coated with white paint as it is ideal for maintaining temperature. It also helps to immediately recognize dust, insects, etc. Cabinets are available in multiple sizes, depths and drawer heights.
7. **Compact storage**: Compact storage with lock and key is ideal for storing rare collection of the center such as rare books and valuable manuscript collections.

3.5.1 Types of storage for Manuscripts:

Traditional Indian system of wrapping the manuscripts in a square piece of cotton cloth and tying it tightly with a ribbon called pothi or vesthetan has proven to be an effective method of storing manuscripts for centuries. This method can be continued for even today by occasionally replacing the wrapping cloth with a fresh one. Manuscripts can also be kept in acid free solander boxes and archival cases. Loose documents or Single sheets can be stored in window-cut mount boards and between two mount boards.

Single documents are recommended to be kept separately between soft tissue paper and then stored in special portfolios of good quality material containing an outer cover of thick acid free Mount Board and an inner paper folder for keeping documents, portfolio that is kept between the two mount boards and tied with a ribbon. Soft tissue paper must be placed as separator in between the documents.

a. Palm leaf Manuscripts: Palm leaf manuscripts are always kept between two wooden boards slightly bigger than the size of the leaves. Palm-leaf manuscripts should be kept in bundles and kept on racks or special cabinets. Cushioning material may be placed on the top in the racks. It is important to keep distance between the objects.

Traditionally, Tibetan Buddhist scripture called Thankas are stored in small boxes and in drawers.

b. Environmental Conditions: The temperature is storage areas should not exceed 20'c-to 25 degree centigrade. Ideal Relative humidity level of 45/to 50% is to be maintained. Light should be 50 Lux for Manuscripts, textile, prints, M ptgs150 Lux. 150-200 Lux for oil painting and painted objects. 75 uw/lumen is the maximum tolerable limit of Ultra Violet rays for manuscripts.

Use of Aromatic chemicals to thwart deterioration of biological degradation: Use of aromatic sublimating substances such as thymol, naphthalene balls, pentachlorophenol, gemeksin (C6H6Cl6) powder, insecticidal papers, use of insecticides such as copper sulphate, periodic cleaning of storage area using a vacuum cleaner, inspection of manuscripts before and after monsoon season, prohibition of food and drinking substances into the stacking area, prohibition of smoking, lighting of agarbatti and other incandescent sticks, occasional sprinkling insecticidal substances on the floor, etc are recommended.

c. Handling Manuscripts: Standard Operating Procedures are to be drafted comprising of rules for staff about do's and don'ts. For transporting the manuscripts, rare books, use of trolleys and trays with some cushioning material is recommended.

3.6 Guidelines for Manuscript Use for Researchers:

Researchers always like to use the original, primary and rare sources of information by themselves, fully knowing that the document may damage due to direct handling. This is particularly true in case of historical research, where

researchers are engaged to dig up the facts of pasts by verifying primary sources in which many facts are hidden unexposed and secondary sources may have chances of errors and generally multiplied from one edition to next. Hence it is vitally important to formulate some guidelines and procedures in respect of handling of precious manuscripts by the custodian centers which will not only help library to maintain safety for its manuscript collection, but also to help researchers to have proper service. Subodh Gopal Nandi (2010) presents a few guidelines suitable for Indian libraries by emulating the example of the Bodleian Library, University of Oxford which devised certain procedures for its manuscript division, which are much relevant in context of Indian libraries:

1. It may be explicitly displayed at the entry of the manuscripts reading room that admission is not open to all and only persons having membership of the special library will have access. A complete list of rules and regulations for use of the manuscripts should be prominently displayed in the manuscript reading room.

2. Non-member visiting researcher / academician/ member of professional association, may be asked to produce a letter of recommendation from their organisation, confirming the surname and forenames of the applicant, the applicant's position, academic degree etc. The letter should contain status of the researcher, the research topic or academic purpose and must be in writing on letter headed paper of the head of the organization, duly signed with date.

3. In case of on the fly visitors who have no such identity shall be asked to write an application to the librarian by detailing the purpose of using the manuscripts in the reading room. For this purpose, a prescribed application form may be maintained by library.

4. The permission to use the manuscript collection will be issued by the librarian or head of the manuscripts department of a library for a specific period only. The researcher will be required to produce a new or fresh written recommendation from their organization, if the permission period over or research topic is changed.

5. The manuscript resource center must maintain a visitor's register to enter their particulars. A requisition slip may be devised to request for the required manuscripts to the librarian or the manuscript-in-charge.

6. Scanned images/photocopies may be provided for a fee to the researcher.

3.7 Disaster Management:

There are two kinds of disasters that threaten the manuscripts and the custodian centers (Mamta, 2019a).

a. Natural Disasters: Fire, flood, earthquake, tsunami, landslides, drought, storm and lighting are some of the chief natural disasters.

b. Manmade Disasters: Road, Rail & Air Traffic Accidents, chemical & Industrial Accidents, epidemic, bomb blast, theft, handling of manuscripts by untrained person, urban development, terrorist attack.

There are some chief objectives of disaster management: The first one is to reduce and if possible, avoid the potential losses from hazards, achieve rapid and durable recovery as soon as the disaster occurs. The other objective is to establish normal conditions after a disaster, initiate appropriate procedures for getting emergency funds. For all this, training to staff and administrator is to be conducted for disaster preparedness.

The disaster preparedness plan consists of prominently displaying the phone numbers and address of resource person and staff along with the phone numbers to call during emergency such as police station, fire brigade, nearest hospital number, number of insurance company, etc.

A four phase disaster plan is recommended to be prepared to face any eventuality in the event of any disaster.

Phase 1 Prevention: Consists of time to time building inspection and installation of fire extinguishers, smoke detectors, fire alarms, safety alarm for electricity, emergency light and other safety equipments. It also involves Checking and sound alarm for water leakage. Training and operating function of safety measures is to be provided to the concerned staff. It is of utmost importance to prepare a proper listing the collection & location and keep this record separately in another place.

Phase 2 Response: Consists of divide team duty, plan of disaster kit/ disaster box, cloth, bucket, brush, cotton, polythene, scissors, bags, pencil, chalk, note pad, adhesive tape, sand, adhesive tape, glovers, boots, torch, first Aid, scale, clips, rope, threads, magnify lens, handmade sheet, absorbent paper/blotter, waste newspapers, etc., are to be kept available in the event of manuscripts becoming wet due to

flooding. The persons involved in the response management must continuously check and update the authorities about the action being taken. Their job also involves making efforts to disconnect the source of the disaster as quickly and as efficiently as possible.

Phase 3 Reaction/Immediate Action: Recognize the damage and identify, classification of damage, categorization, photo documentation of the damage done, press intimation, listing of loss material and inform the insurance companies, voluntary service offer, separate the object and classify damage, use storage boxes, folders, use emergency repair, damage object send to laboratory.

Phase 4 Recovery: Prompt action for recovery, insurance policies, security agencies, improving the storage plan, relocation of shelves, raise funds for recovery.

3.8 Digitization Standards:

Dr. A.P.J. Abdul Kalam, Former President of India succinctly described what a digital library is:

'*Digital Library is where the past meets the present and creates the future …'*

Digital platform is now fast emerging as the vehicle of information for creation, acquisition, transmission and dissemination. Modern multimedia technology can play a major role in preservation and promotion of cultural heritage as it can represent information in all forms such as textual, visual (still and moving) and audio. The World Wide Web is a wide reaching medium through which anything and everything will be available to anyone and everyone around the globe.

Rupinder Singh et al (2010) point out that digital reproductions are virtually immortal providing access to images for researchers without time and space limitations. They minimize handling of originals. Further by making available digital reproductions at lower resolutions to the scholars as a paid service and also through sale of high quality posters to art patrons around the world via e-commerce websites, revenue can also be generated by the manuscript custodian center.

Since the cultural heritage collections are distributed and spread, technologies and tools are to be applied to digitization process to cover storage, manipulation, access, delivery, use, security and charging. Sustainable technical solutions are required which are robust, have a broad applicability, take into account the abilities to handle

large number of records and are consistent across categories. Appropriate application of technical standards by those involved in digitization activities is essential if the digitised collections are to be maintainable in a cost-effective way over time. The National Knowledge Commission of India NKC's *Working Group on Libraries,* and *Working Group on Open Access and Open Educational Resources* have strongly recommended digitization of documentary heritage collections.

a. Legal Issues: One of the legal issues that the custodians of manuscripts worry about while digitizing their manuscripts is in respect of Copyrights. However, it may be remembered that the copyright holds good for 60 years from the year following the death of the author. Since the manuscripts are more than 75 year old, the question of copyright does not normally arise. However the institution holding the heritage content may feel a sense of right on the contents of the manuscripts and may be averse to share it openly. But they should remember that the heritage is the common property of all and no individual or institution can claim sole right.

If need be, a copyright disclaimer on access to and use of images within the completed digital project may be hosted on the website. Digital rights management structure encompassing IPR, acquisition and management of rights, on licensing Institutional assets, patents, trademarks, etc., may be formulated to avoid any future challenges. Any copyright restrictions or other terms of use must be explicitly stated. For conveying this information, established standards such as a Creative Commons license may be employed.

b. Digitization of heritage knowledge base: Core Technical Issues Involved:

In the yesteryears, manuscripts containing a wealth of ancient wisdom were available only in mutts, temples, monasteries and with individual householders owing to which the access to such wealth of knowledge was very much restricted. Thanks to the proliferation of information and technology in the past three decades the space and time constraints in accessing any knowledge source is completely effaced. Now the digitized versions of the manuscripts can be uploaded on to the World Wide Web so that researchers, academicians, students, scholars and enthusiasts can access them with the click of a button. Digitizing the manuscripts provides several advantages:

The cultural heritage in museums, archives and libraries should be digitized according to prioritization plans. The materials should be universally accessible to all through

information networks, providing access to and promoting knowledge of Indian civilization at the national and international levels, with an option to download the digitized objects and collections. The cultural heritage materials should emerge to constitute an important resource for research, education and content creation.

c. Rationale for digitization: Digitization of manuscripts that were hitherto inaccessible to the world community will prove to be an important game changer in the ways people discover information and conduct research based on such material. Panage (2003) describes the advantages and disadvantages of digitization:

a) **Digitization as preservation**: Digitization is universally acclaimed as an effective mechanism for preserving the knowledge for posterity. Manuscripts that have become fragile or those with unique value or content cannot be handled frequently. Surrogates created by through digitization reduce the burden on original materials.

b) **Greater access**: The wisdom of the ancients can now be shared with anybody without spatial and temporal limitations thanks to the revolutions in Information and Communication Technologies.

c) **Undamaged Originals**: Digital information can be edited, updated, modified and revised and quality enhancements can be added to the digital copy without damaging the originals.

d) **Non-linear Searching**: One great advantage of digital content is that it enables non-linear non-sequential searching of information just as the human mind is programmed. In a physical document, if a researcher wants to know more about a particular idea or theme he is introduced to, he has no alternative but to close the present manuscript and begin a new search in the catalogue for manuscripts containing the wanted theme. Digital content can provide related links and provide similar content with just a click of a button. Digitization also offers the possibility of being able to search both local and remote catalogues and to create a web of links or pointers from the documents accessed by the users to associated documents in the same or other collections. In addition, full text searches can be made.

e) **Minimized dependence on human resources**: Once the content gets digitized and made accessible on a network, the need for intervention by a staff is almost completely reduced.

f) **Reduced shelf space**: The digital information greatly reduces the shelf space required. This in turn greatly mitigates the need for maintaining controlled environment for the preservation thereby greatly reducing the maintenance costs.

d. Challenges to address while digitizing:

a) Cost: One of the disadvantages that was frequently mentioned in the literature produced between 1990 and 2010 is the cost component. But the cost of scanning equipment, storage and transmission has dramatically come down in the recent past. However even today, the initial cost of investment in respect of the equipment required to carry out the digitization process can be expensive to buy.

b) **Skill**: The technicalities involved in digitization require that the manpower deployed on the work is required to possess technical skills.

c) Storage: The storage costs have also dramatically come down and these days and the computer storage is also capable of enduring rugged conditions as compared to about three decades ago.

d) Migration: The digital technologies are changing in leaps and bounds. This means that the software formats and hardware used for storing and retrieving the data changes completely in just three to five years. This implies that the data created and stored is to be migrated to new technology every now and then increasing the cost component.

e) Metadata creation: Mere capturing of images is insufficient so long as the meta tags are not created by feeding the data from the catalogues.

e. Designing Workflow for creating the collection

The process of creating a digital collection can be broken down into various phases or steps. All of the processes should be adequately documented. If the general design of the project and the tasks of the participants are clearly defined and known, mistakes and misunderstandings can be prevented.

a) The flowchart for digitization: A comprehensive flowchart prepared from the suggestions of Shiel and Broadhurst (1995) in the digitization of British library at London, Carl Fleischhauer (1996) and Stuart Lee (2001) is presented below:

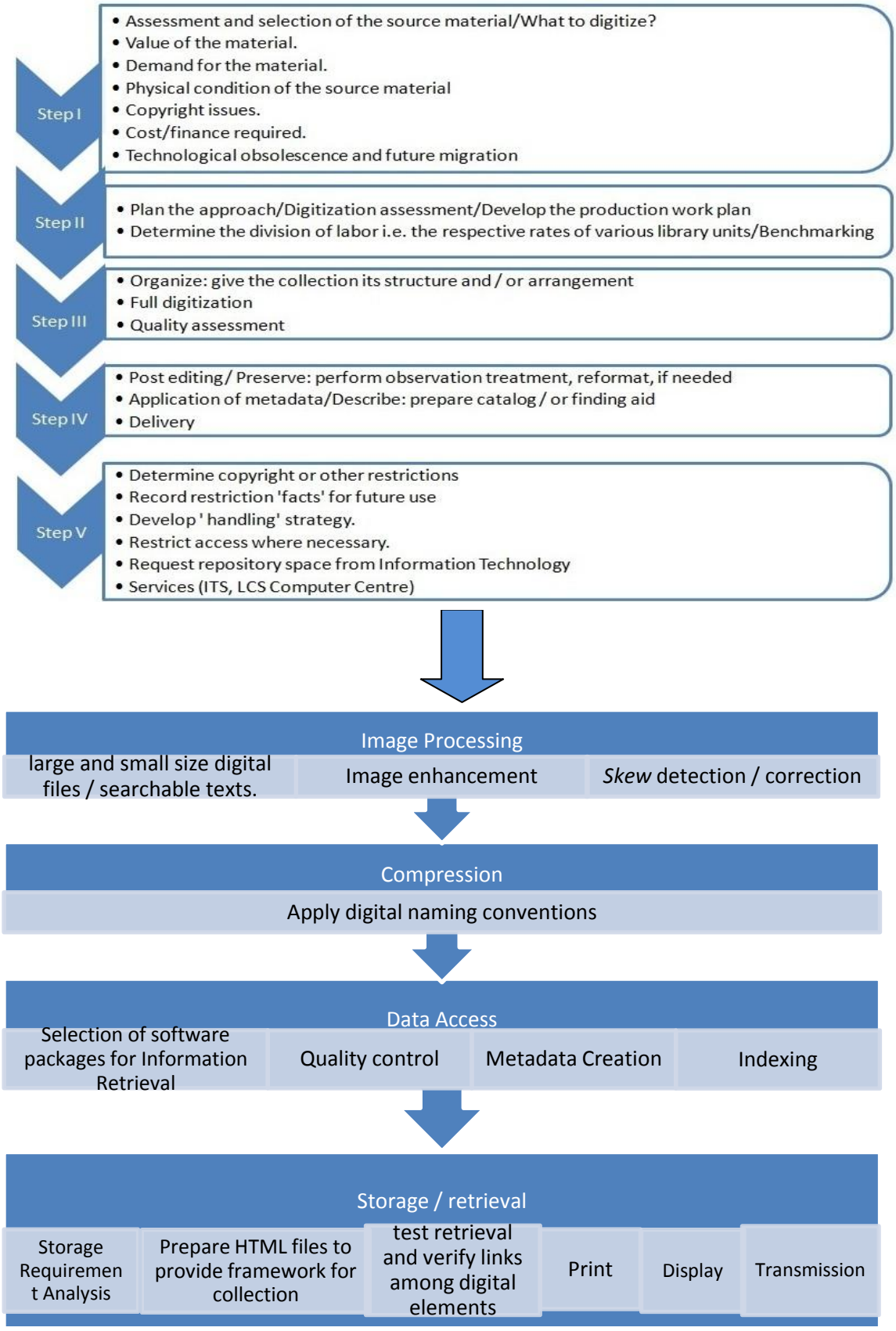
Step I
• Assessment and selection of the source material/What to digitize?
• Value of the material.
• Demand for the material.
• Physical condition of the source material
• Copyright issues.
• Cost/finance required.
• Technological obsolescence and future migration
Step II
• Plan the approach/Digitization assessment/Develop the production work plan
• Determine the division of labor i.e. the respective rates of various library units/Benchmarking
Step III
• Organize: give the collection its structure and / or arrangement
• Full digitization
• Quality assessment
Step IV
• Post editing/ Preserve: perform observation treatment, reformat, if needed
• Application of metadata/Describe: prepare catalog / or finding aid
• Delivery
Step V
• Determine copyright or other restrictions
• Record restriction 'facts' for future use
• Develop ' handling' strategy.
• Restrict access where necessary.
• Request repository space from Information Technology
• Services (ITS, LCS Computer Centre)
Image Processing
large and small size digital files / searchable texts.
Image enhancement
Skew detection / correction
Compression
Apply digital naming conventions
Data Access
Selection of software packages for Information Retrieval
Quality control
Metadata Creation
Indexing
Storage / retrieval
Storage Requiremen t Analysis
Prepare HTML files to provide framework for collection
test retrieval and verify links among digital elements
Print
Display
Transmission

Fig 3.1: Flowchart for Digitization

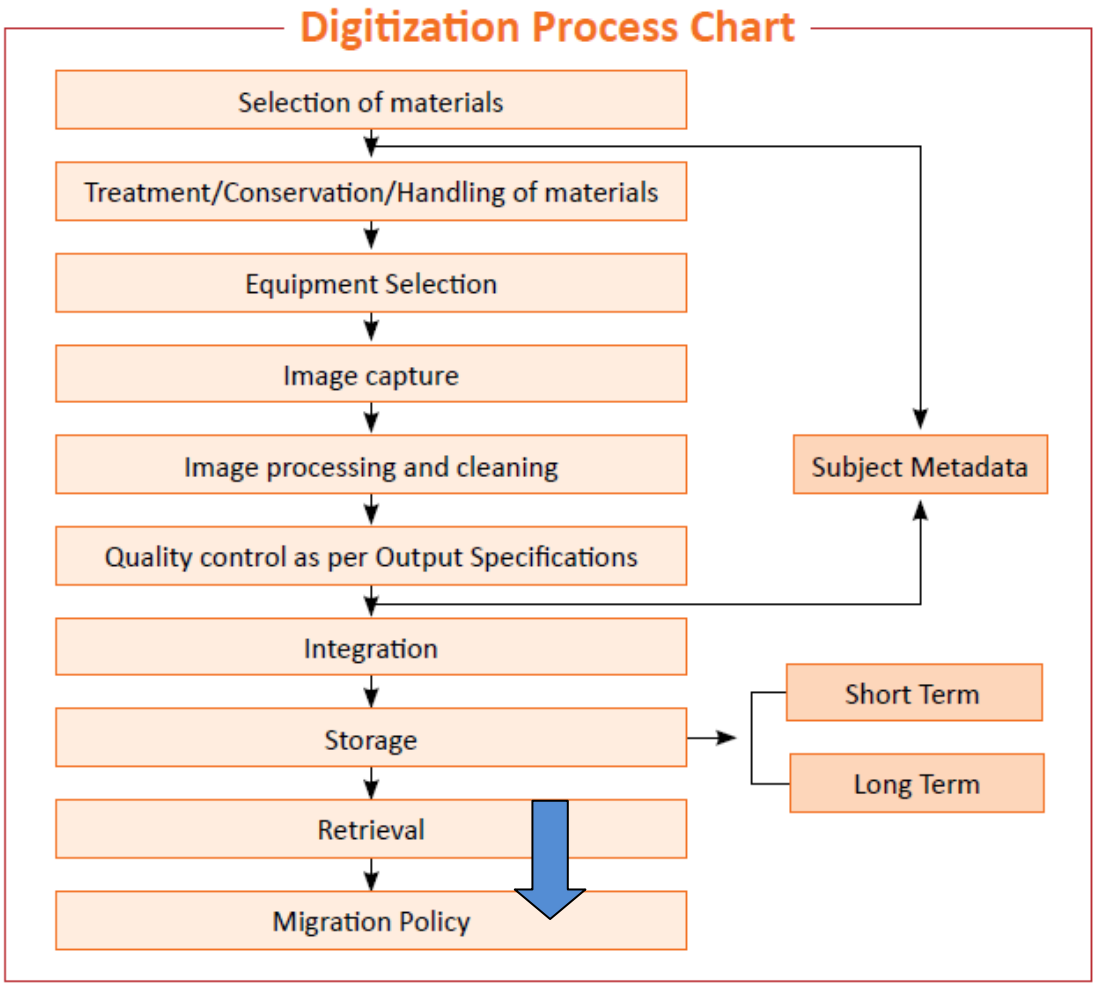

Fig 3.2: Digitization Process Chart (*Courtesy: NMM* (Tripathi, n.d.))

Panage (2003) is right when he points out that though digitization activities are carried out at many places, a careful thought is not given to selection procedures, policies, standards and methods to be adopted for digitization. Hence a list of digitization standards is summarized below:

f. Digitization Standards: The Rare Books and Manuscripts Section was established in 1958 by Association of College and Research Libraries (ACRL), a division of the American Library Association (ALA) to represent and promote concerns related to rare books, manuscripts, and other special collections. This and many other organizations have established certain standards for digital objects so as to enable seamless access across the globe. Some such standards are described below:

a) PREMIS: The PREMIS Data Dictionary for Preservation Metadata is the international standard for metadata to support the preservation of digital

objects and ensure their long-term usability. PREMIS is implemented in digital preservation projects around the world. The PREMIS standard consists of the Data Dictionary, an XML schema, and supporting documentation (LoC, n.d.).

b) METS: The Metadata Encoding and Transmission Standard is a metadata standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital library, expressed using the XML schema language of the World Wide Web Consortium (W3C). The standard is maintained as part of the MARC standards of the Library of Congress, and is being developed as an initiative of the Digital Library Federation (DLF).

The following guidelines are compiled from the guidelines jointly prepared and published by UNESCO and IFLA for Digitization Projects for Collections and Holdings in the Public Domain, particularly those held by Libraries and Archives and the Million Book Universal Library Project: Manual for Metadata Capture, Digitization, and OCR prepared by Gabrielle V. Michalek (2003) for the Digital Library of India and Universal Digital Library projects which is used across scanning centers and regional mega scanning centers of DLI project in India and a very comprehensive manual prepared by the digitization team of National Mission for Manuscripts (2004) which is used by manuscript digitization centers of the Mission across India. The classic cases of Memory of the world programme of UNESCO and the Library of Congress and the Million Book Project by the Carnegie Mellon University are taken as the base to specify the standards and specifications relating to digitization of manuscripts. In the last fifteen years, digitization guidelines have proliferated in many forms at the international, national, local, and institutional levels, and all of them reflect a set of best practices that continues to evolve.

g. Guidelines for Technicalities:

1. **Scanner selection**: Though the duplex scanners are inexpensive and offer good scanning speed, they require the books to be unbound so that the pages could be fed through in batches. Further, the folios will have to be cut on all four edges for smooth feeding into the scanner. Secondly, dust an inevitable accompaniment to manuscripts, causes frequent jamming necessitating subsequent cleaning of the scanner. Paper fixatives may have to be employed to counteract the dust. Spraying on the fixative slows the project and may not yield entirely satisfactory results. Some

manuscripts have illustrations/charts etc which are created using ancient inks, vegetable dyes, metals such as silver, gold etc. They are likely to get oxidized if exposed to bright light and heat. Hence, non-contact device should be used to capture images with cool light and so, overhead scanners such as Minolta Overhead Book Scanner or Fujitsu ScanSnap SV 600, though require greater initial investment will prove more efficient and economical in long run. With overhead scanners bound manuscripts do not have to be unbound and manuscripts in book form do not lose their original form. Dust, thick paper, and long books can also be easily accommodated. The scanners come with inbuilt image processing software for curvature correction, de-skewing, de-speckling and cropping allowing thick books to be scanned either flat or in an angled cradle that reduces wear on the spine. High-resolution digital cameras are recommended for medieval manuscripts and other materials for which researchers will want to study minute details. In any case, thorough training is required to operate the scanner.

Use of glass plates to keep the original flat during digital capture is not recommended due to the risk of damaged pages or spines. Newer manual book scanning devices are being developed that minimize the pressure exerted by the glass plates. Unbinding volumes for any kind of reproduction is no longer considered a best practice. Long, horizontal format requires special handling considerations.

2. Image Quality Standards: Resolution, color depth, color saturation, image brightness, image integrity, and the absence of halos and other optical flaws and lighting are some of the elements of image quality to consider. Image quality at capture can be defined as the cumulative result of the scanning resolution, the bit depth of the scanned image, the enhancement processes and the compression applied, the scanning device or technique used, and the skill of the scanning operator. Three grades of images – preservation quality (also called Raw Master Images), Access Quality conforming to PDF-A or JPEG 2000 standards and finally thumbnail – may be created. However according to the NMM standards, an intermediate image file of cleaned, lossless-compressed image called Clean Master Image is to be created before creating the 'Derivative lossy image' called Access Quality Image (Tripathi, n.d., p. 27). For highest quality reproduction of Raw Master and Clean Master Images, Tiff (Tagged Image File Format) image format may be chosen with specified header content. TIFF tags are normally supplied by the software default settings that include

scanner technical information, filename, and other data. ITU is the recommended compression algorithm. Various image formats recommended by the NMM are as follows:

Raw Master Image (Original Digitized Image)	
File Format	Tiff 6.0 or higher
Compression	Uncompressed
Spatial Resolution	3 0 0 / 600 dpi minimum, optical
Subject Meta-data	As per standards fixed by NMM
File Naming	As specified by NMM
Clean Master Image (Cleaned Image)	
File Format	Tiff 6.0 or higher
Compression	Loss less compression
Spatial Resolution	8'x 10' at 300dpi
Subject Meta-data	As per standards fixed by NMM
File Naming	As specified by NMM
PDF-A Image	
File Format	PDF
Compression	Group 4 CCITT lossy compression
Spatial Resolution	1024 x 768 pixels at 300 dpi
Subject Meta-data File	As per standards fixed by NMM
Naming	As specified by NMM

Table 3.2 Image Formats and Specifications as Suggested by the NMM

(Source: NMM Annual Report 2017-18)

Compression techniques abbreviate repeated information or eliminate information that the human eye cannot detect. The quality of an image is affected by the compression techniques that are used and the level of compression applied. Compression techniques can be either 'lossless', which means that a decompressed image will be identical to its earlier state because no information is thrown away when the file size is reduced, or 'lossy' when the least significant information is averaged and decompressed image in this case will not be identical to its earlier state as part of information is discarded in this process. In general 'lossless' compression is used for master files and 'lossy' compression techniques for access files. Derivative images namely Access Image will be derived from the cleaned image (Tripathi, n.d. p. 27).

For access quality images, one may have to sacrifice some aesthetic appeal of the images so long as legibility is not impaired and may choose 'lossy' JPEG compression. For thumbnails gif format images are suitable. The image resolution may be ensured not to be below 300 dpi (600 dpi is ideal) with spatial resolution of 8" X 10" at 300 dpi for Preservation quality images and about 100-150 dpi with a spatial

resolution of 1024 x 768 pixels for access quality images and web optimized 75 dpi or less for thumbnails. Increasing the number of pixels used to capture the image will result in a higher resolution and a greater ability to delineate fine details, but just continuing to increase resolution, after certain extent, will not result in better quality, only in a larger file size.

Presentation formats should be easily browsed, downloadable, and easily manipulated. Presentation files are created from the master files known as preservation quality images. TIFF or JPEG 2000 files are appropriate when a high degree of zoom is needed by the user. The master high-resolution TIFF files are usually saved for archival purposes and not used for presentation because they are too large for rapid display and easy manipulation while JPEG and PDF are popular presentation formats.

While deciding on the capture resolutions, it is important to calculate how much storage space is needed and the download time that researchers need to invest. To accommodate current and future needs capturing at 1.5 times above the currently desired final format is recommended. The higher the image quality, the more uses the file will have in the future.

For black and white images there are two options to choose from: grayscale and bitonal image. Bitonal images offer some of the smallest file sizes among all image types, because of their extreme simplicity and so are easily transmittable across low bandwidth networks as well. However, that small file size comes at the expense of readability: There is no *color depth* (also called *bit depth*) at all, and anything in the image that used shading or fine features are likely to be unrecognizable. In any case, it should always be kept in mind that the images should be as readable as the original pages. Skewing of images must be restricted to be within a specified range of degrees.

World Wide Web browsers are not natively set up to accommodate TIFF-format, ITU T.6 (Group IV) compressed images, and it is necessary to produce an additional set of access images for the World Wide Web. These are reduced scale tonal images in the GIF format, produced by running a batch conversion process on the previously scanned preservation-quality images. (Louise et al., 1998).

3. Fidelity to the Original: It is to be remembered that the entire MSS should be captured and not just the intellectual content so as to preserve as much as possible the

look and feel of the original object. It is necessary to photograph entire pages front and back (including beyond the edges) and not to crop images within the page edges. To provide the researcher a fair understanding of the size of the original object, a linear scale must be included in the image. The orientation of pages within one binding unit should not be altered by image processing or turning the object. Illustrated materials like manuscript charts should be scanned separately and merged with the text at the appropriate location.

During the image capture, scanning individual pages of books is usually preferred because it accommodates items with tight bindings and facilitates the display of pages with page-turning software. Scanning two facing pages sometimes may be necessary to display its content or preferred in order to maintain orientation and coherence; however this method can lead to indexing problems later on.

Paper or cardboard should be inserted behind damaged pages. Translucent pages should be backed with beige or white backgrounds to minimize "bleed-through". Most institutions attempt to use the same background for the entire project.

Color is one of the most important and complex issues when attempting to recreate the look and feel of the original object. At least one selected page or image from an object should contain a color target to facilitate color calibration. Each piece of equipment should be calibrated to the same color value standard (for example, the CIR-Lab system) and re-calibrated periodically. Display hardware should also be calibrated.

4. Post-capture image processing: Calibrated monitors must be used to ensure the accuracy and integrity of the end product. Images that fail the quality standards of the project should be rephotographed and replaced. Missing images should be supplied and inserted into the proper sequence. The structural metadata should be reviewed again and revised as necessary.

No image processing should be done at this stage other than color correction. Institutions should have a policy about if, or when, color correction is permitted. The policy should also indicate how information about post-capture image color manipulation is communicated to the user. However, the guidelines recommended by the NMM suggest that the raw image should be processed to remove dirt, worm marks, water marks, noise, shadow, scratch marks, skew etc. Adjustment of

brightness and contrast, gamma correction, sharpening and blurring, removing patterns and adjusting colors should also be part of image processing (Tripathi, n.d., p. 27). In the NMM parlance, this image is called Clean Master Image. It is to be remembered that since NMM recommends cleaning the image captured as against IFLA's standard.

5. Image Evaluation: NMM recommends evaluating the image quality both on screen and based on print-outs. It recommends viewing the scanned images at 1:1 (100% enlargement) on screen. Calibrated charts are to be used to evaluate grayscale and color reproduction (color calibration). Resolution targets and histograms are to be used to evaluate spatial resolution and tonal reproduction. Print-out evaluation shall also be done on sample basis. Printouts are to be compared with the source documents to determine efficacy of image reproduction through digitization. Image quality checklist provided by the NMM is appended as Appendix B.

6. Image Naming and Storage Standard: A standard file naming system such as associating the digital file with the institution and/or with the physical object must be devised according to the institutional policy. Each digitized object should have a persistent identifier. The manuscript name is to be used as the folder name in which images are to be sequentially stored. 8.3 file naming format is to be adopted. E.g., 00000001.tif as first image and 00000341.tif as 341st image in volume sequence.

Manus Id is generated by the Manus Granthavali cataloguing software of the Mission. Meta data information for each manuscript scanned is also stored in the database, identified by its Manus Id. So in case of NMM aided digitization activity, the Manus Id and the Accession Number given by the institute where the digitization is taking place forms the basis of naming the digitized images of each manuscript page.

NMM recommends a unique sty of file and folder naming (Tripathi, n.d., p. 32):

Folder Naming: Name of the folder containing the manuscript images must be the Manus ID (which will be provided by NMM) following title, Acc.no, type of image (Clean Tiff/Raw tiff/PDF).

For Example: IGO 001333948 Krushnalila EXT_96 Clean Tiff.

If the manuscript name is provided in diacritic or Devanagari in the metadata then the folder name should contain the name in the concerned format only.

For Example: BOO0000740792 Rāmāyaṇa S17-58-571 PDF.

The moot point is that the system of naming should be such that it facilitates access to data as well as would be easy to understand for the lay users.

7. File Format and OCR Support: It is important to decide beforehand the final format of the digitized object. For example it would be a waste of money to simply scan the folios and store them in image format as it would not support searching within the text. Many digitization projects have been carried out without due consideration of all these issues and so many Indian manuscript repositories do not offer the search capabilities any serious researcher would look for. Hence it is important to consider if the final format of the project will achieve the overall goals.

The images are to be scanned using optical character recognition software to enable searching within the text. After that, the full text is to be indexed for enhanced searching capabilities within the database. Digital content stored in image format without OCR support is of little use for the researcher as searching within the text will not be possible. OCR program *Abby Fine Reader* is suitable for English character recognition, due to its ability to keep words intact even if they were hyphenated between two pages. The OCR accuracy of *Abby Fine Reader* is about 98% of text if the text is legible. Devanagari OCR is to be employed for Indian scripts. The output of the OCR is to be edited by a professional scholar as handwritten letters are sometimes misunderstood by the software. The text needs to be converted to ascii/Unicode format to allow full text search. Text mark-up, and/or the inclusion of geospatial coordinates can be added for enhancing value. Libraries may provide annotations, commentary, and other important contextual information to add value to digitized collections and make them more useable. Newer distribution systems are offering technology to facilitate transcription, annotation, and image analysis. Institutional watermarks hamper and prevent the use of images. Hence if at all they are added, it should be ensured that they do not interfere with the main part of the image.

8. Metadata Creation: The metadata enable the search engines to connect search query with the search results. The digitization of rare and unique collections such as manuscripts requires maintaining the physical, intellectual, and contextual relationships both within the various parts of a single physical object and also among

the parts of the collection as a whole. This requires creating and maintaining special metadata in respect of these relationships to enable better precision in the search results. Appropriate contextual information and metadata help the user evaluate the authenticity and reliability of the digitized content and communicating evidence of the physical artifact to the users. Four types of metadata are to be created in respect of digitized heritage material:

a. Bibliographic (or descriptive) metadata: Bibliographic metadata is the fundamental description of the physical object being digitized, containing information about the intellectual content. Since the cataloguing and documentation of the manuscripts takes place much before initiation of the digitization activity, the same bibliographic data can be imported to prepare the metadata. If adequate metadata do not exist, it should be created before digitization occurs. It is important to add cross reference entries of links to the catalogue records pointing to the digital version, and from the digital version pointing back to the catalogue record, after the items are digitized. This should include a detailed physical description of the item or holding. Software using the standard Z39.50 protocol can search and retrieve relevant metadata from catalog records fields and so author, title, and other publication data need not have to be rekeyed. The guidelines issued by the NMM require the following bibliographic metadata: 1. Material number, 2. Title, 3. Other title, 4. Author, 5. Organization, 6. Commentary 7. Commentator 8. Scribe 9. Language 10. Script 11. Complete/Incomplete 12. Subject 13. Bundle number 14. Folio number, 15. Pages, 16. Material, 17. Missing portion, 18. Illustrations, 19. Condition, 20. Catalogue source, 21. Remarks, 22. Manuscript date, 23. Manuscript length (in inches), 24. Manuscript width (in inches) (Tripathi, n.d. p. 29). These are in accordance with the specific Manus Data Record created using Manus Granthavali software already in use within the National Mission for Manuscripts.

b. Structural metadata: Structural metadata help to collate contiguity by collating manuscript folios, archives, correspondences, or photo albums without which the context cannot be appreciated. This metadata allows users to navigate through the chapters and other parts of a book successfully. Prior to digitization, each folio must be paginated so as not to break the continuity. The structural metadata must include the total number of pages as well as identification of recto and verso, numbering schemes, textual divisions, important quotations, and illustrations.

c. Technical metadata: Also called the image metadata, is usually created automatically by the camera or scanner and appears in the header of the file. The common technical data include the length and width in pixels, sampling, compression, if any, resolution, image size in bytes, production information detailing the brand and model of the camera or scanner used and date of creation. It is important to include details of any image manipulations carried out and be made known to the users. These, as specified by the NMM include 1. File Name (assigned at the time of scanning), 2. Date Created, 3. Date Modified, 4. Equipment Used, 5. Image Format, 6. Width, 7. Pixels, 8. Height (in Pixels), 9. Color Mode (RGB, grayscale), 10. Resolution (in Pixel per inch), 11. File Size, 12. Color Profile (ICC color profile), 13. Make (Scanner Software) 14. X Resolution (Scanning Resolution in the X axis) 15. Y Resolution (Scanning Resolution in the Y axis), 16. Resolution Units, 17. Software, and 18. Imaging Software (Tripathi, n.d., p. 30).

d. Administrative metadata: Administrative metadata is optional which may include the name of the photographer, the owner of the image or of the original item, copyright information, and credit lines. Administrative metadata and how the files were created and stored. Administrative metadata must be maintained internally as file descriptions in the project databases and externally as part of the copyright permission database.

Several AI tools such as machine summarization, intelligent indexing, and information mining are available which can be employed for creating and displaying data automatically. There are several technologies available that will allow commercial browsers to harvest metadata aggressively. In addition to its own indexes, the hosting institute may also rely on other major indexers such as Google and participating libraries may be roped in to create a pool of heritage resources.

9. User Expectations: Users look for open and free access, easy discovery through common search engines, unproblematic interaction and display using standard web browsers and plug-ins, viewing options including two-page display and zooming capabilities, book marking and tagging functionality for later retrieval, individualized annotation capabilities, printing capabilities, and the ability to download, reuse, and combine. Page turning software may be used to recreate the reading room experience.

10. Data Integrity: A scalable database is to be created. Mirroring the site at several locations worldwide will protect the security, integrity and availability of the data. A globally distributed database will appear to be a virtual central database from any place around the world. Regularly evaluation of the need to migrate the collection or emulate software functionality is to be carried out.

In order to ensure persistent access to a resource, the use of a Persistent Identifier (PI) is strongly recommended, such as PURL (Persistent Uniform Resource Locator), URN (Uniform Resource Name), DOI (Digital Object Identifier), or Handle. A Persistent Identifier not only facilitates access when local URLs to the unique digital object are changed, but it also provides a convenient method for citation and future verification. It will also be critical in any future linked data environment.

11. Multilingual Support: Once the digital content is hosted using OCR software, the institutions may think of making available the resources to the world citizens in their own language by conforming to the data and semantic interoperability standards. The heritage content may be made available in more than one language, using machine translation systems.

12. Storage Recommendations: ISO9660 format is recommended if images and directories are to be written on a CD-ROM. The NMM has the following recommendations to make in respect of disc specifications and storage conditions.

- The digitized images may be stored on DVD's, blue ray, tapes and hard disks of superior and reputed quality. For long-term storage conditions
- For archiving recordable (R) discs, discs that have a gold metal reflective layer are recommended. However this is slowly becoming less important and cloud storage with multiple backups is considered as the best option.
- For general storage, a temperature between 4°C (39°F) and 20°C (68°F) is recommended with a relative humidity of 20% to 50%.
- For long term storage, 18°C (64.4°F) and 40% RH are recommended.
- For extended term archival storage even lower temperature and humidity are recommended.
- Storage in the dark, while not absolutely, is recommended.

- Microfilming of digital data can be an option to preserve the digital data for long term.

13. International Cooperation: Models for cross domain cooperation between archives, libraries and museums as content owners should be explored as the means of developing complementarities between resources, creation of content and context, and delivering new digital services.

14. Quality control: Efforts should be made to incorporate quality management into all stages of the project. The overall quality parameters include: high quality optical images, completeness and reliability of the metadata including links, faithfulness to the original, and ease of use. Standards set by the National Manuscript Mission, IFLA, LoC and DLF shall be meticulously followed. These standards describe the best in digitization currently followed across the globe. Any digitization project is expected to maintain a 98% accuracy rate for the quality of images and the inclusion of all pages. The hosting institution must also evolve a mechanism to allow users to report missing pages. These missing pages are to be scanned and dropped back into the existing scanned text.

15. Logistics: One of the major decisions the institution desiring to digitize its manuscript wealth is to decide on whether to carry out the digitization process in house by developing the human resources through training and procuring the required hardware and software or to outsource the work to a third party. Developing an in house solution is more suitable for those institutions where the collection development takes places continuously through new procurements and donations. It also proves highly economical in long run. Outsourcing the work to a third party recognized by NMM will be useful in maintaining the standards since the third party is bound legally by the NMM to conform to the set standards. The institution will have to weigh the pros and cons of each option before finalizing the method of digitization. The decision on whether the digitization be accomplished in-house or by external service providers depends on availability of space, money, and equipment, expertise and funding. The decision must be weighed against what the external vendor is ready to provide. Advantages of doing the digitization in-house may include building expertise and infrastructure to accomplish future projects, less risk of damage to original materials and more control over the quality of the images and transfer of the data. On the other hand, using external service providers may provide expertise

and better equipment, lower cost, and/or a faster completion time with guaranteed results, thus allowing in-house staff to accomplish other tasks. It is to be kept in mind that outsourcing invariably requires a significant amount of in-house staff time to manage the project.

16. Calculation of Optimum scanner throughput: One overhead scanner could scan about 240 folios in an hour. Thus, in a day with one shift daily (for duration of 7 hrs a day) = 1680 folios or 840 pages.

Assuming 250 working days per year = 4, 20,000 folios can be scanned.

Allowing a generous 20% discount in throughput, an institution could conveniently digitize about 3,36,000 pages.

Post scanning image processing and textual editing of OCR output is a time consuming activity which could probably take another six months for making ready these digital contents for hosting on the website.

17. Charging and discharging of manuscripts: It is vitally important to follow due procedure of tracking and recording the movement of manuscripts received for digitization and returned after the process. Further, due procedures are to be followed for carrying the manuscripts from the stacking area to the digitization zone and for handling the manuscripts with proper care. Ideally manuscripts may be conserved with due procedure before they are allowed to be handled for digitization so as to avoid tearing of manuscript folios during the process of digitization. Use of special equipment to minimize damage such as humidifiers, book cradles, etc., is recommended. The digitization equipment should be set up as closely to the manuscript stacking section as possible to minimize damage in transport and handling. Digitization staff must be provided training in handling the manuscripts such as the appropriate opening angle for bound manuscripts and the appropriate handling of fragile objects. All items should be inspected at the beginning and at the end of the digitization process for possible losses or damages.

18. Dissemination: Since most of the digitization of manuscripts in any institution is done by the government funding, it is incumbent upon the institution to provide global access to digitized collections including the distribution of metadata and links. One way to increase access and visibility is through the use of portals and other aggregators, which might be international, national, or subject-specific.

Many libraries also promote and advertise digital collections through the use of blogs and social networking sites as a way of reaching out to interested organizations and associations. Before sharing content with external services and aggregators, libraries should carefully review the "terms of participation" and legal rights of images to make sure that they do not conflict with library policies or other collaboration agreements already in place.

19. Quantification: Feedback forms may be made available to facilitate the evaluation process. Statistics such as: the number of manuscripts/objects digitized, the number of visits to portal pages, the number of times a digital object is viewed and/or downloaded, the number of times it is cited or linked to, etc., may be made available on the website.

20. Cost to benefit calculations: Since digitization enhances research, learning, and teaching by making a critical mass of scholarly information freely available to read online the expenditure incurred on the project is justified.

3.9 Conclusion: This chapter discussed various issues that concern the Manuscript Resource Centers and Manuscript Conservation Centers and compiled internationally accepted guidelines and standards in respect various activities carried out in these centers. The chapter took a bird's eye view on cataloguing of manuscripts by taking a survey of brief history of cataloguing of manuscripts in India and the challenges in manuscript cataloguing and described the cataloguing standards and fields of catalogue. The chapter also pointed out certain important points to remember while cataloguing. As regards to the factors and preventive methods deterioration of manuscripts effects of humidity and light, reasons for acidity in the paper, biological factors. The chapter also distinguished among conservation, preservation and restoration and debated on whether content, artifact or both are to be conserved. The chapter explained the need for standard and time tested traditional conservation practices as well as modern conservation practices. Another important aspect is in respect of recommended standards for stacking and transporting manuscripts. The chapter gave an overview of various types of storage for manuscripts and gave broad guidelines for manuscript use for researchers. Issues concerning disaster management were addressed. The chapter concluded by presenting in detail digitization standards set forth by the NMM, IFLA and other international agencies.

REFERENCE:

Abid, A. (2011). *MEMORY OF THE WORLD*. Information Society Division UNESCO. www.unesco.org › new › MULTIMEDIA › pdf › mow

Agrawal, O. P. (2006). Keynote Address. In A. Sah (Ed.), *Indigenous Methods and Manuscript Preservation*. National Mission for Manuscripts Department of Culture, Ministry of Tourism and Culture, Government of India& D K Printworld (p) Ltd.

Balakrishna, P. (2011). *Preservation and organization of manuscripts in the libraries of Andhra Pradesh A study* [PhD Thesis, Sri Krishnadevaraya University]. http://hdl.handle.net/10603/65216

Bisht, A. S. (2003). *Conservation science*. Agam Kala Prakashan.

Biswas, A. (2003). *Bangla Puthir Katha*. Ratnavali.

Chatterjee, M. (2010). History of the Catalogue of Sanskrit Manuscripts. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Clarkson, C. (1987). Conservation priories; A library conservator's view. In *Conservation of library and Archives materials and the graphic arts*. Butterworth.

Conservation. (1975). *American Council of Learned Societies Newsletter*, *26*, 1–8.

Fleischhauer, C. (1996, January). *Library of Congress and Ameritech Competition (1996-1999): Resources for Applicants—Steps in Digitization Process (Library of Congress).* Steps in the Digitization Process. http://lcweb2.loc.gov/ammem/award/docs/stepsdig.html

Gupta, K. K. (2019, May 13). *Cleaning of Paper Materials* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Harvey, R. (1993). *Preservation in Libraries: Principles, Strategies, and Practices for Librarians*. Bowker-Saur. https://books.google.co.in/books?id=yPzgAAAAMAAJ

Jain, A. K., Kumar, S., Choudhury, S., Jain, K. B., & Sharma, B. (2013, August 17). Rare handwritten manuscript collection in Indic Languages at Scindia Oriental Research Institute (SORI), (India). *WLIC 2013: Future Libraries Infinite Possibilities*. IFLA WLIC 2013, Singapore.

Lalitha, J. (2010). Cataloguing of Manuscripts and its Difficulties. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Lee, S. D. (2001). *Digital Imaging: A Practical handbook*. Library Association.

Li, M., & Niu, J. (2010). A preservation framework for Chinese ancient books. *Journal of Documentation*, *66*(2), 259–278.

LoC, T. (n.d.). *PREMIS: Preservation Metadata Maintenance Activity*. Retrieved November 18, 2020, from https://www.loc.gov/standards/premis/

Louise, H. S. I., Ott, D. M., & Fleischhauer, C. (1998). *Library of Congress Manuscript Digitization Demonstration Project Final Report*. https://memory.loc.gov/ammem/pictel/pictel.pdf

Mamta, M. (2019a, May 13). *Disaster Management* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Mamta, M. (2019b, May 13). *Storage and Handling of Manuscripts* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Nandi, S. G. (2010). Manuscript Use and Manuscript Preservation with Special Reference to Palm-Leave Manuscripts. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Panage, B. M. (2003). *Conservation and preservation of library materials with special reference to digitization of rare materials* [PhD Thesis, Savitribai Phule Pune University]. http://hdl.handle.net/10603/175048

Pande, V. (2019, May 13). *Effect of Light on manuscripts* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Pearce-Moses, R. (2005). *A glossary of archival and records terminology by Richard*. Society of American Archivists.

Pedersen, H. P. (1975). Comments on the Barrow Double Method for Deacidification. *International Association of Book and Paper Conservators (IADA)*, 111–115.

Principles for the Care and Handling of Library Material: International Preservation. (1998). International Federation of Library Associations.

Raval, V. (2016). *Heritage preservation in indian cultural modern practice and their possible integration with special reference to manuscripts* [PhD Thesis, Gujarat University]. http://hdl.handle.net/10603/186571

Roy, N. G. (2010). Anatomy of Manuscripts. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Sah, A. (Ed.). (2006). *Indigenous Methods and Manuscript Preservation*. National Mission for Manuscripts Department of Culture, Ministry of Tourism and Culture, Government of India& D K Printworld (p) Ltd.

Sharma, A., & Bala, S. (2010). Traditional Methods of Preserving Manuscripts: An Overview. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Sheil, A., & Broadhurst, R. (1995). *Library MaterialDigitization Demonstration Project: British Library* (No. 94; Library and Information Research Report). British Library Research and Development Department.

Singh, R., Kumar, S., & Agarwal, D. (2010). Preservation, Conservtion and Digitization of Manuscripts: Problems & Prospects. In S.G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Tripathi, D. (Ed.). (n.d.). *Guidelines for the digitization of archival material*. Director, National Mission for Manuscripts.

UNESCO. (2017, March 16). *Memory of the World*. Memory of the World. https://en.unesco.org/programme/mow

CHAPTER – IV
NMM and Manuscript Custodian Centers in Maharashtra

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4.4.7 **Chandmal Tarachand Bora Mahavidyalay, Pune**

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4.4.9 **Dasopant Samshodhan Mandal**

4.4.10 **Deccan College Post graduate and Research Institute, Pune**

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4.5 **Conclusion**

Chapter - IV

NMM and Manuscript Preservation Centers in Maharashtra

4.0 Introduction:

This chapter examines the conservation and digitization efforts carried out by the NMM and its partner centers in Maharashtra. It provides a descriptive analysis of infrastructure, collection development, cataloguing, publishing, by various partner centers of NMM and deliberates on various constraints and challenges faced by them in locating, conserving and digitizing manuscripts. This chapter also describes on procedures, practices, techniques, methods, mechanism, strategies and policies adopted in searching, collecting, selecting, acquiring, processing, storing, conversing, preserving and disseminating heritage collections (Manuscripts) by the NMM centers in Maharashtra.

4.1 National Mission for Manuscripts (NMM):

The National Mission for Manuscripts, an autonomous organization under the government of India was established on 7th February 2003, by the Ministry of Tourism and Culture, Government of India under the aegis of the Indira Gandhi National Center for Arts (IGNCA) by the visionary Prime Minister of that time, Shri Atal Bihari Vajpayee. The IGNCA was also entrusted with the job of setting up a National Manuscripts Library ("National Mission for Manuscripts," 2002). This library is envisaged as the central repository for microfilms and digital copies of all Indian manuscripts. The Mission was set up during the 10th Five-Year Plan with an estimated outlay of Rs. 250 million for an initial period of 5 years. The Mission's objective is to unearth and preserve the most valuable but less visible of our cultural inheritances – the vast manuscript wealth of India. Prior to the inception of the Mission, IGNCA the parent body of NMM, has rightly identified the challenge before the Mission when it pointed out that the 'most daunting task for the Mission arises from the fact that the custodians of the manuscripts are dispersed and unidentified' ("National Mission for Manuscripts," 2002).

The Mission functions with the following objectives:

- **Survey and Locate**: The Mission with the help of the Manuscript Resource Centers and other partnering agencies conducts surveys around the country and abroad to locate manuscripts held by a variety of custodians.
- **Catalogue and Compile**: The NMM has been compiling an elaborate descriptive catalogue and creating a national electronic database of manuscripts titled Bharatiya Kriti Sampada.
- **Conserve and Preserve**: By establishing Manuscript Conservation Centers across the country and through networking with other leading conservation agencies in the country, efforts are made to conserve damaged manuscripts. The Mission offers extensive training programs in conservation thereby setting standards for manuscript conservation.
- **Promote Access**: The mission aims to provide 24/7 accessibility to the manuscripts through internet access and also establish a National Manuscripts Library.
- **Promote Scholarship**: Through the documentation and preservation of manuscripts the scope for research and subsequent publications of ancient wisdom is increased manifold.
- **Public Outreach**: A number of public outreach programs through a series of talks, seminars, our newsletter and other programmes are carried out by the Mission. (*National Mission for Manuscripts*, n.d.)

The Mission strives to attain these objectives by identifying/partnering and according the status to agencies working in the field of manuscript conservation. There are four such kinds of partnering centers of the NMM spread across the country established region wise:

1. **Manuscript Resource Centers (MRC)**
2. **Manuscript Conservation Centers (MCC)**
3. **Manuscript Partner Centers (MPC)**
4. **Manuscript Conservation Partner Centers (MCPC)**

The National Mission for Manuscripts works with the help of 54 Manuscript Resource Centers and 49 MCCs and nearly 300 sub centers, MCPCs spread all over the country.

The MRCs include well-established Indological institutes, museums, libraries, universities and non-government organizations. These partner centers function as the Mission's coordinating agencies in their respective regions.

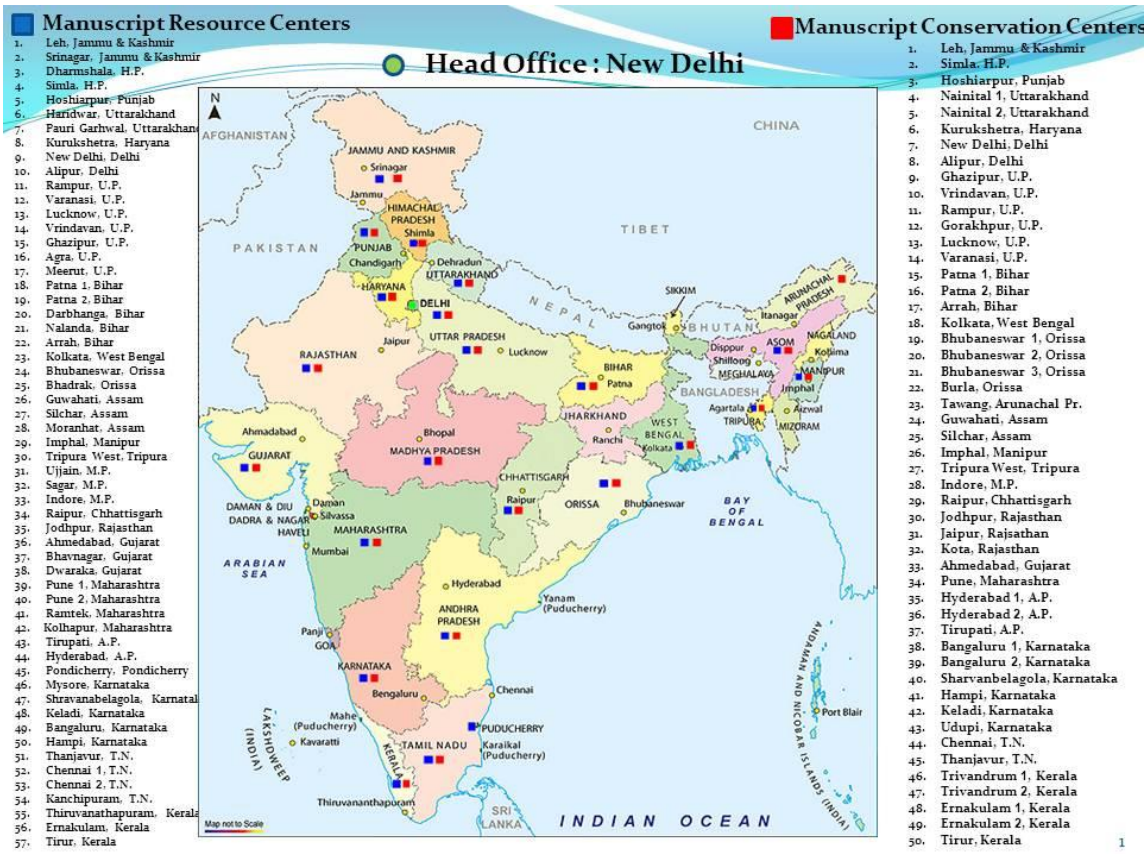

Fig 4.1: Manuscript Resource Centers and Manuscript Conservation Centers in India

Year	MRCs Established under NMM	MCCs Established under NMM
2003-04	24	15
2004-05	3	5
2005-06	14	6
2006-07	6	7
2007-08	0	0
2008-09	0	0
2009-10	0	2
2010-11	7	14
Total	**54**	**49**

Table 4.1 MRCs and MCCs Established by NMM

It is estimated that India has about ten million manuscripts, probably the largest collection in the world. These cover a variety of themes, textures and aesthetics, scripts, languages, calligraphies, illuminations and illustration. Recognizing this

challenge before the Mission, national surveys are being conducted all over India to locate, document and preserve manuscripts lying in temples and Mutts, public libraries and private holdings or state archives. The Mission has the mandate of identifying, documenting, conserving and making accessible the manuscript heritage of India. To start with, a pilot survey was carried out in 2004-05 as a Pilot Project in three states – Orissa, Bihar and Uttar Pradesh and a total of 53 districts — 30 in Orissa, 13 in Uttar Pradesh and 10 in Bihar were covered. In the Pilot Project itself, the Mission unearthed 6,50,000 manuscripts and about 35,000 repositories. The next round of Survey was held in Delhi, Manipur, Karnataka and Assam in 2005-2006. While in Delhi, about 85,000 manuscripts were found, in Manipur 10,000 manuscripts, about 42,000 manuscripts in Assam and 1,50,000 manuscripts in Karnataka were found. The following year, in 2006-07, the National Survey took place in Himachal Pradesh, Haryana and Tamil Nadu. The National Survey was successful in locating approximately 20,000 manuscripts across the State, with local scripts like Takri coming to the focus. In Haryana the Survey has been successful in locating approximately 500 manuscripts. In Rajasthan out of total 33 Districts 19 Districts are already surveyed and a total of 7,50,001 Manuscripts are identified. In 2007-08, the Mission conducted National Survey of Manuscripts in all 18 Districts of Chhattisgarh and in all 16 Districts of Arunachal Pradesh. In Chhattisgarh, the Survey was conducted by the coordination of the Directorates of Archives and Museums, Chhattisgarh and in Arunachal Pradesh, it was conducted by the Coordination of Dept. of Cultural Affairs, Directorate of Research, (Culture, History, Archeology, Museum, Archives & Philosophy), Itanagar. In the financial year 2007-08 survey was initiated in the States of Madhya Pradesh, Goa and in the State of Jammu & Kashmir. In April 2012**,** the Survey, which was initiated in the year 2007 concluded in all 13 Districts of Uttarakhand, Sikkim and Mizoram.

The highest number of manuscripts are available in north zone at 421409 (30.53%), where as the second highest number of manuscripts are traced in south zone with 374307 (27.12%). The third highest number of manuscripts are in east zone with 250124 (18.12%), while the number of manuscripts available in west zone are 255555 (18.52%). Llastly the lowest number of manuscripts are found in central zone with 78810 (5.71%) . The number of MRCs established by the NMM under different zones are 17 (31.48%), 15 (27.78%), 11 (20.37%), 8 (14.81%) and 3 (5.71%) respectively

(Kumar, 2014). Interestingly the same numbers have also been reported elsewhere (Sahoo et al., 2013). But it may be noted that these numbers do not match at all with the NMM numbers.

Zones	No of States & UTs included	No. of MRCs	% of MRCs	No. of MSS	% of MSS
North	8 (6 States & 2 UTs)	17	31.48	421409	30.53
South	5 (4 states & 1UT)	15	27.78	374307	27.12
East	6	11	20.37	250124	18.12
West	3	8	14.81	255555	18.52
Central	1	3	5.56	78810	5.71
Total	23	54	100.00	1380205	100.00

Table 4.2: Distribution of Manuscripts & MRCs across various Zones

It is estimated that owing to wear and tear, almost all palm leaf manuscripts may perish in the next 50 to 100 years. During the preliminary deliberations, the ensued before the establishment of NMM, Prof. N.R.Shetty, Member Secretary, IGNCA, emphasized on the need to create a National Register of Manuscripts as one of the first steps in the implementation of the Mission ("National Mission for Manuscripts," 2002). Taking cue from this, the Mission has taken up the task of evolving a National Electronic Database of Manuscripts which integrates information pertaining to different aspects of manuscriptology such as material, script, language, subject, place of availability, no. of pages, illustrations, etc. The NMM is also entrusted with the job of creating the first of its kind National Electronic Catalogue of all the manuscripts called Bharatiya Kriti Sampada. The latest Annual Report (2017-18) uploaded by the NMM on its website provides the MSS data contributed by various MRCs annually. (Annual Reports later than 2017-18 are not yet published by the NMM):

Partner Center	No of MSS Data Uploaded
BBKKRC	16890
AS, Pune	56158
KKSU	4528
BORI, Pune	78581

Table 4.3: MSS Data uploaded by MRCs in Maharashtra

Financial Year	Year-wise data uploaded by MRCs	Total data received
2003-04	**0,05,222**	**0,05,222**
2004-05	**0,44,172**	**0,49,394**
2005-06	**0,10,383**	**0,59,777**
2006-07	**6,18,760**	**6,78,537**
2007-08	**6,67,116**	**13,45,653**
2008-09	**5,46,498**	**18,92,151**
2009-10	**3,40,721**	**22,32,872**

2010-11	1,74,866	24,07,738
2011-12	2,59,727	26,67,465
2012-13	1,76,457	28,43,922
2013-14	1,65,788	30,09,710
2014-15	1,77,845	31,87,555
2015-16	1,39,450	33,27,005
2016-17	1,44,977	34,71,982
2017-18	0,82,858	35,54,840

Table 4.4: Year wise MSS Data Provided by MRCs

Digitization of manuscripts is another important function of NMM. The Manuscript Resource Centers (MRC) established by the NMM in various states of the country are digitizing the manuscripts identified by the experts as the most important.

Since its inception, NMM has been able to catalogue about 44 lakh manuscript, conservation of about 8 crore folios, publish 103 books and organized more than 350 workshops (Jha, 2021). According to the NMM officials by the end of 2020, over three lakh twenty thousand manuscripts containing over 3 crore 85 lakh folios have been digitized till date. Apart from engaging itself in the conservation and preservation of manuscripts, the Mission has also been making accessible the knowledge content contained in the manuscripts through lectures, seminars, school programs and also through bringing out critical editions of significant texts. With its motto, 'conserving the past for the future' NMM has undoubtedly emerged as the most popular and effective movement among all the heritage conservation initiatives in the country.

4.2 NMM Partner Centers in Maharashtra:

The state of Maharashtra is known as the land of saints. The Bhakti movement of India left a powerful influence on Maharashtra and many saints have produced a vast Bhakti literature in the medieval era. This literature was available on MSS that were housed in several mutts and temples. Later these were collected by eminent historians sensitive towards heritage conservation and deposited in various institutions. Recognizing the importance of Maharashtra as one of the important states of manuscript heritage, the NMM has recognized several institutions as its partner centers in conserving the manuscript heritage. A descriptive evaluation of the NMM

partner centers in Maharashtra is presented below. The sequencing of the centers here is chronologically arranged in accordance with their date of inception.

4.2.1 University of Mumbai, Mumbai (MRC) (*About Library*, n.d.) (*LIBRARY | University of Mumbai*, n.d.):

The present day University of Mumbai was established in 1857 as the University of Bombay. With a munificence of Rs. 2,00,000 each received in two quick successions, from Premchand Roychand a merchant prince of Bombay, 'towards the erection of a university library', construction of the library building and a clock tower was initiated on March 1, 1869 and completed in November 1878. It was formally opened to readers on February 27, 1880.

The library is particularly rich in various reference materials, bibliographical tools, books on Mathematics, the Social Sciences and Indology. It also has a valuable and rare collection of back files of periodicals in Sciences, the Social Sciences and Indology.

Thanks to the various loans and donations including those from the U.G.C, the India Wheat Loan Fund and other individuals and organizations, the library's stock of books and periodicals has been steadily growing and the library today is literally bursting through its seams, even though four tier annexe to the main library building to provide space for 2,20,000 books was built in 1959. Realizing the shortage of space another Campus of the University was set up at Vidyanagari in 1968 and a unit of the University Library therein was constructed in July 1971. The new Library building named Jawaharlal Nehru Library, was constructed and was inaugurated on 18th October, 1976 and expanded in phases. Now it functions in a full fledged manner and caters to the library needs of students, scholars, faculty of all the departments situated on Campus.

The Collection: In 1879, the Library began with a very humble collection consisiting of historical and biographical miscellaneous books presented by the Government in 1864. As the old library of the East India Company, was being relocated to the India Office books were distributed among the Indian Universities and the University of Mumbai received its share. The university purchased in 1876, Dr. John Wilson's Collection from the heirs of Dr.Wilson which consisted mainly of Orientalia, and books on travel and theology. The library then had 4,504 books and 214 manuscripts.

Other books were also presented to the University by individual donors from time to time.

Today it has a stock of nearly 4, 70,000 books, periodicals and other material. The library also houses UNO Repository center containing 12,280 books and World Bank Repository with 30,104 books. At present, the library has 8844 manuscripts and rare books and has 2,000 microforms. The library possesses more than 1,190 manuscripts in Arabic, Persian and Urdu and about 7,418 in Sanskrit and allied languages. The manuscript collection contains manuscripts on the Islamic theology, logic metaphysics, Sufism, history, biography, literature, lexicography, astrology and astronomy, medicine, archery, falconry, Dakhni language and Zoroastrianism. There are also translations of Sanskrit works.

The second collection of the Arabic, Persian and Urdu manuscripts which contains some valuable manuscripts in Dakhni Urdu belonged to the late Maulvi Muhammad Yusuf Khatkhatay of Bombay. This collection was brought to the notice of the University by Professor A. A. A. Fayzee and it was purchased for the library from the heirs of the late Maulvi Saheb. A catalogue of this collection is under preparation.

A valuable collection of 160 Arabic manuscripts was donated by Professor Fayzee in 1962. These deal with law, history, theology and philosophy of Mustalian Ismailis, popularly known as Daudi and Sulaymani Bohras. This collection has a special significance because it makes available to scholars and research workers material which was deemed to be highly secret and not allowed to be in the hands of non-sectarians. Some of the unique items in this collection are: 'Kitabul Islam' and 'Alamun-nubuwa', two important works of the first Ismaili author, Abu Hatik ar-Razi; most of the works of Fatimid period; some of the works of Mu'ayyad fid-din ash-Shirazi, another famous writer of the Fatimid period. A descriptive catalogue of this collection compiled by Professor Muizz Goriawala was published in 1965. The oldest manuscript available in the library is a leather bound Paper in the Hamdani Collection Authored by Ibrahim B. Husain titled Al - Risalah Al - Sharifah Fi Maami Latifah dated 557 - 1268 A.H. written in Naskh Script in Arabic Language.

Being one of the oldest repositories of knowledge in the country, the Mumbai University Library has some of the rarest manuscripts, books and periodicals. The University enjoys a rich archive of rare books and manuscripts. There are as many as

6000 rare books, 47 rare dictionaries, 66 rare grammar books, 8076 manuscripts and 90 rare diaries in the University record. These are properly catalogued with Accession number and maintained in the University Library. The Knowledge Resource Center, Rajabai Tower Library of University of Mumbai has enriched its collection over the years by various rare documents, materials, books, manuscripts, artifacts etc. The oldest book available in library dates back to 1490. The center has approximately 8,600 manuscripts in Sanskrit, Arabic and Urdu language and approximately 80 palm leaf manuscripts. Manuscripts in possession are older than 600 A.D. (*Conservation and Preservation of Rare Books and Manuscripts*, n.d.)

Over the years the Library has acquired many prominent special collections. People have donated their entire collections to the University. Some of the significant books acquired during last five years include, The life of Field Marshall Wellington (1853), Elphinstone School Papers (1862, 1863), History of Marathas (1918), Kesari Prabodha (1853), Elements of Hindi and Brajbhaka Grammar(1839).

S.No.	Collection Name	Description
1.	Sir Jamshedjee Jeejeebhoy the first Baronet ranging from 1826-1876 and Serene Maneckjee Cursetjee (1857-1939) collection.	Diaries, Personal Records of old Bombay families.
2.	Ashana Irabatti collection	Newspaper clippings mostly in Marathi.
3.	Baburao Patel Collection	Newspaper clippings consisiting of 750 files on social and political conditions in the 1950's and 1960's.
4.	Lokhitawadi Collection	12,000 books and back volumes of journals in Marathi, English, Hindi.
5.	Art collections	Books on art Presented by Ms.P.F. Pavari
6.	Letters	342 letters of lokhitawadi presented by Dr. Indumati Parikh.
7.	Manuscripts	7500 Sanskrit manuscripts, 1376 Persian, Urdu and Arabic manuscripts (Fyzee, Khatkhate, Hamadani Collections).
8.	A.K. Priolkar Collection	Early printed books in Sanskrit, Marathi, English and Portuguese.
9.	Patkar Collection	Law books.
10.	M.M.P.Y.Kane Collection	Books on Law, Sanskrit.
11.	Dr. B. Ambedkar Collection	Books, Newspapers, letters.

12.	Collection of material on Mumbai (Bombay)	Special collection of rare books on the city.
13.	Khairmoday Collection	on Dr. BabasahebAmbedkar
14.	Dr. Velkar Collection	on Shri. Bal GangadharTilak
15.	Bharatratna Shri. Pandurang Vaman Kane Collection	Private Collection
16.	Shri. G. D. Khanolkar Collection	Private Collection
17.	Dr. AroonTikekar Collection	Private Collection
18.	Shri Arun Joshi	Private Collection
19.	Shri Jerry Pinto	Private Collection

Table 4.5: Special Collections including Donations from Individual Donors

Cataloguing: A descriptive catalogue of the Arabic, Persian and Urdu manuscripts in the library compiled by Khan Bahadur Abdul Kadir-e-Sarfaraz was published in 1935.

Conservation: The University Library had followed traditional methods of maintaining bundles of palm leaf manuscripts in red fabric, inserting Neem tree leaves, and fumigation and butter paper lamination of rare books. Efforts of staff and maintenance which was carried out throughout all these years helped in preserving these books and manuscripts. The restoration and digitization of rare books is a lengthy, skillful and laborious process. The process of preservation involved fumigating books for 8 to 10 hours to get rid of all living organisms that are harmful to the books. After this process, the books are brushed and dusted. Before initiating any treatment, the condition of the rare book and its pages is determined by conducting the PH test with distilled water regarding the acidic and alkaline contents. University library has preserved and scanned around 300 rare resources.

This is the list of few of gems which have been restored due comprehensive preservation project of books.

1. The Modern Traveler India Vol 1 by Conder, Josiah, 1830

2. The Modern Traveler India Vol 3 by Conder, Josiah, 1830

3. The East India Sketch Book: Comprising an account of the present State of Society in Calcutta, Bombay vol 2 1832

4. The Bombay University Calendar by Bombay University, 1861

5. Voyage of East India by Terry Edward 1855

6. Voyages De Francios Betneir, by Premier, Tome, 1724

7. Viaggi Di Pietro Della Valle – Vol II by Schipano, Mario, 1843

8. English and Burman Vocabulary by Hough, G. H., 1825

9. From the caves and Jungles of Hindosthan, Blavatsky, H, 1908

10. Premchund Roychund: His early life and career, Wacha, D. E., 1913

Digitization: University library has also made efforts in conserving the rare books through process of digitization. It had received Rs. 27 Lakhs for digitization of rare books from Tata Consultancy eleven years ago in 2009. After fumigation and dry brushing, the books are sent for scanning, editing, indexing and stored in DVDs. The pages are then separated. The University of Mumbai Library is in the process of preserving and digitizing the Palm Leaf Manuscripts collection too. As a result the University of Mumbai Library in collaboration with Dept. of Sanskrit under UGC UPE grant undertook a project of Preservation and Digitization of palm leaf manuscripts. This project was initiated in January 2012 and 1057 folios were scanned and preserved. In the year 2017, University of Mumbai Library received BookEye 4 Professional Scanners under RUSA grant. Till date library has scanned approximately 26 paper manuscripts.

Services: Apart from the reading room facility, the library offers membership to PhD. students and teachers of other Universities. Writers, journalists' and visitors are also given membership under the General Reader category. Besides this, the library extends visitors cards to visitors for 3 days extended up to 6 days, if they so desire. Other services include photocopying service, reference service, referral service, CD-ROM search and Internet Search services.

Staff: The library has one librarian and three assistant librarians.

4.2.2 Shree Forbes Gujarati Sabha, Mumbai (MPC, MRC and MCPC):

The Forbes Gujarati Sabha was the brain child of Justice Alexander Kinlock Farbus. It was started as an organization for the promotion of Gujarati literatures in Mumbai in 1865. Forbes had a deep interest in archaeology, ancient monuments and manuscripts, which made him intensely interested in the old archaeological and historical remains of Gujarat. In 1856, he published *Ras Mala* in two volumes which

documented the history and chronicles from 8th century to arrival of British and folk literature of Gujarat as well as an historical account of the place and people he came to know during his stay in Gujarat ("Alexander Kinloch Forbes," 2020). SFGS has been receiving funding from private donors since inception. It is based on these donations that a corpus is built, interest of which is used to run the Sabha. Recently the Sabha has sold out its property and took a building on lease in Mumbai.

The Collection: Shree Forbes Gujarati Sabha, Mumbai's the second-oldest library and research center, houses a very valuable collection of Farsi and Gujarati Manuscripts of pre independence era. Shree Forbes Gujarathi Sabha was established in 1865. Its library has a total of 1700 manuscripts on various media such as paper, palm leaf, and birch bark. There are at least two copper plate MSS.As far as the Farsi manuscripts are concerned, all of them are paper manuscripts. In all, the total number of Farsi manuscripts possessed by the Sabha is 44 bundles. Of the Farsi Manuscripts of the Sabha, there are 30 complete and 14 incomplete manuscripts. However, the annexture to the catalogue of Farsi manuscripts mentions that between Hijri 8 to 13 many popular personalities of Gujarat have written in Parsi language of which 81 are hand written and 10 are printed. The oldest Farsi MSS is dated Hizri Samvat 1023 (1645AD).

Time Period of the Farsi Manuscripts:

S.No.	Period	No. of Manuscripts
1.	Earliest (Before 1300 A.D)	None
2.	1301A.D-1600 A.D	3
3.	1601.A.D-1900 A.D	22 Farsi +307
4.	190l.A.D-1947A.D.	351
5.	Number of manuscripts whose dates are not known or not mentioned	53

Table 4.6: Time Period of MSS at SFGS

Language wise MSS list: Gujarati 411, Guj (Raj) 1, Guj/Hin(Mishra) 7, Guj/Hindi 11, Guj/Hin(Charani) 1, Gujarati (Charani) 3, Gujarati (Gadya) 1, Gujarati/Sanskrit 13, Gujarati (Aadi) 1, Hindi 103, Hindi/Gujarati(Charani) 1, Hindi/Gujarati 8, Hindi/Urdu 1, Charani 3, Sanskrit 52, Sanskrit/Pra 1, Sanskrit/Gujarati 2, Sanskrit/English 4, Marathi 19, English 27, English/Sanskrit 1, Prakrit/Sanskrit 2, Farsi 45, Gujarati/English 1, Marathi/English (not avl) 1, Not Mentioned 6.

Manuscripts are also available in Farsi, Arabic and also in Bhakha dialect. Volume 28-2 titled 'Sad Pand' was originally written in Greek language.

Scripts: Nastaliq, Shikasta and Ardha-shikasta, Nagari lipi, Balbodh & Gujarati, Gujarati, Devanagari

Subject categories: History, Literature (Abhanga (pad)), Kavya, Sangeet, Astrology, Vaidakiya, Patra-lekhan, stories, kosh, Tatvagnan, Pingal., Alankar, Arti, Charitra, Chhand shashtra, Danpatra-Lekh, Garbo, Git, Jain Darshan, Katha, Khgol-bhogol, Kimvadati, kosh, Lokgit, Mahiti, Mantra-tantra, Natak (Bhavai), Nayika Bhed, Pad, Patra yatravarnan, Pingal, Prashashti, Prashashti lekh, Puran, Puranic mahiti, Raas-charitra, Rajniti, saloko, stotra, Stuti, Tattvadnyan, Updesh, Varitra, Varta, vyakran.

Damages: Common damages to the manuscripts include loss, torn edges, missing pages, eaten by pests insects, rodents etc. In some manuscripts, the lines are blurred due to water damage. In a couple of books blocks are not found.

Uniqueness of the collections: The Volume 3-2 of Farsi manuscripts possessed by the Sabha is available only at other three places in the world, viz., the British Museum, Oxford Bodelina Library and the India office library. Anc 2 Tarik -e-Punjab contains war maps. Volume 6 Divan Tohaf tul irakyin this is written with perfect measurement and proportion of hand writing with exact shade of ink from the beginning to the end and the scribe (Katib) broke his pen nib after writing this book. This work is known as pride of farbes Sabha Hastilekith Bhandar. Volume 7 kulliya te talib it is written with golden square border on all four sides Ank 14-2 majmaun navadir it shows amazing command of Gujrati people over Parsi language. Parsi language contains two types of words viz., with nuktha and without nuktha. The beauty of this work is that the whole book is written with different nukthas to show great command over language and beauty in script. Volume 18-2. tasnifat A ranchodji the scribe here presents amazing combination of Parsi and Sanskrit languages as antarlapika and bahirlapika.

The Sabha, has a rich collection of books on various topics and research material and manuscripts related to the 19th century. To preserve this heritage CD-ROMs have been produced by the Sabha under a programme to digitize 19th Century Gujarati publications. These digital E-books cover the wide range of topics including Gujarati language, literature, history etc.

Catalogue and Documentation: In the year 1923, an exhaustive catalogue of manuscripts was published in Gujarati by Shree Forbes Gujarati Sabha titled Śrī Phārbasa Gujarātī Sabhānāṃ hastalikhita pustakonī savistara nāmāvali' . A 90 page Catalogue of Persian mss . in Shree Forbes Gujarati Sabha titled 'Phārbasa Gujarātī Sabhā, Mumbaīnā Phārasī hastalikhita granthonī nāmāvalī' was published in 1950. It also published in 1955 a catalogue titled *'Buddhivardhaka Pustakālaya granthanāmāvalī'*. In 1956 'Śrī Phôrbasa Gujarāti Sabhānā hastalikhita granthonī nāmāvali'is published. Later in 1998, the first edition of a 500 page catalogue of handwritten manuscripts in Gujarati titled *'Phārbasa Gujarātī Sabhā hastaprata saṅgrahanī sūci'* is published.

Publications: About 120 books have been published in Gujarati, Sanskrit and English by the Sabha.

4.2.3 Anandashram Samstha, Pune (MRC & MCPC):

Anandashram Samstha was founded by late Lawyer Mahadev Chitanmani Apte in 1888 with the guiding principle: *'Saṃskṛtasya unnatyarthameva nirmitaḥ'*, meaning 'created solely for the elevation of Sanskrit'. This is the first institute in Pune established for the avowed cause of Sanskrit. This is also the first trust in Maharashtra formed by a non-Parsi. Shri Mahadev Chintamani Apte donated all his property to the trust and set up Anandashram Samstha, before renouncing the world. His Samadhi now lies below the Shrisachchidananda temple within the complex. After his demise, his nephew Mr. Hari Narayan Apte, a famous Sanskritist, social reformer, novelist, and thinker, carried forward the work of Anandashram Samstha on the three broad objectives outlined by the founder, Mr Mahaderao Apte in his will.

1. Encourage progress of Sanskrit language by publishing books in Sanskrit on all subjects of Hindu religion as well as Indian culture. Further to collect, archive and preserve manuscripts of historically valuable Sanskrit works making them available to future scholars and researchers.

2. Build and maintain a temple of Shrisachchidananda Shiva Shankara.

3. Provide lodging, boarding, scholarships, etc., to students having very good moral character.

The senior Apte also wanted that learned sadhus and sanyasis should be allowed to stay there for three days and desired that the executive running the institute should also be well-educated and extremely good charactered.

The Manuscript Collection: The library of the Institute houses published books as well as the manuscripts. It has a collection of 15788 manuscrips on twenty-six different subjects with over ten lakh folios, which are collected by its founder, by travelling all over the India. Of the above, there are around 10,000 complete and around 5,000 incomplete manuscripts. The completeness in respect of 788 manuscripts written in other scripts and languages is not ascertained. There are about 120 illustrated and illuminated manuscripts and the rest are surface written. The manuscript *'Jyotisha Ratnamala'* is the oldest one written in 1449 A.D. At present, the Samstha has 14,844 Sanskrit manuscripts, a majority of them date back to the 16th and 17th century. The manuscripts contain a variety of themes such as the Ramayana, Mahabharata, Vastushastra, Kamashastra, astrology, Ayurveda, creative arts like fine arts, music, poetry and literature and numerous other topics. The subjects also include Jyotish, Ayurved and Ganit (Maths). The language wise classification of the manuscripts is: Sanskrit 14844, Marathi 517, Gujarati 10, Hindi 38, Kannada 225 and Telugu 154. Besides paper manuscripts, there are 102 palm leaves in Tamil. As regard to the scripts, 15,553 are in Devanagari script, 225 in Kannada, 10 are in Gujarati and 102 in Tamil.

Subjectwise distribution of manuscript collection is as under:

Sr. No.	Name of Manuscript	No. of MSS	No. of Pages
1	Alankarsahitya	119	15,768
2	Upanishad	363	28,102
3	Kamashastra	8	680
4(1)	Kavya	480	38,480
4(2)	Kavya : Katha	28	5,728
4(3)	Kavya : Nataka	68	6,840
4(4)	Kavya : Champu	33	3,018
4(5)	Kavya Mukta Sangraha	49	1,778
5	Kosha	109	12,714
6	Chandas	24	1,782
7	Jaina	7	336
8	Jyotisha	823	52,902

8(1)	Jyotisha Ganita	67	21,446
9	Dharmashastra	434	92,126
9(1)	Smruti	211	21,558
10	Neeti	19	1,718
11	Nyāya	531	17,230
12(1)	Puranetihasa:Ramanayana	104	26,432
12(2)	Puranetihasa: Mahabharata	290	91,088
12(3)	Puranetihasa: Geeta	123	27,552
12(4)	Puranetihasa: Bhagvata	306	48,060
12(5)	Puranetihasa: Anya Purana	385	91,266
13	Mantra-Tantra	385	12,728
14	Mimāṃsa	102	16,260
15	Yadnika	886	54,306
16	Yogashastra	24	1,738
17	Veda	634	85,256
17(1)	Vedanga	132	13,424
18	Vedānta	453	52,002
19	Vaidyakashastra	230	38,258
20	Vyakarana	840	1,13,620
21	Shilpa-Vastu	41	1,424
22	Sharauta	455	40,862
23	Sangeeta	20	2,870
24	Sankhya	12	1,162
25	Stotra	1167	29,606
26	Smruti Grantha	22	385
	Total	**10,763**	**10,91,082**

Table 4.7: Subject wise Summary of Sanskrit Manuscripts

Manuscripts in Other Languages		
1	Telgu	154
2	Hindi	38
3	Tamil-Tadpatra	102
4	Marathi	517
5	Gujrathi	12
6.	Kannada	225

Table 4.8: Languages Used in Manuscripts

Collection Development: All the manuscripts are collected by donation and/or transferred from old collection.

Budget: The only source of income for this heritage center is from the private donors, interest on bank deposits, sale of books and rent. The center is run on a meager budgetary grant of Rs.2,00,000 per annum and expects to increase the grant by a lakh-rupees more for the coming years. There is no budget for acquisition. Even within this meager budget, about Rs.70,000 per annum is set aside for conservation/preservation. The center is entirely dependent on the grants from the NMM.

Arrangment and Organization: The manuscripts are neatly arranged in Steel almirah with cloth cover and paper. There is adequate reading space, non-AC, ventilation, adequate furniture for storage. The manuscripts are fully classified subjectwise and catalogued alphabetically. Closed access to manuscripts is maintained and manuscripts are provided to the users only through retrieval by the staff. Access is also made available through the website.

The Manuscript Conservation: Apart from the decay due to natural aging of documents, the center reports no other problem. However, to protect the rich collections from insects and white ants, the powder of Acorus Calamus (Vekhanda) used to be spread between the pages in the earlier period and then those were tied in cloth. The manuscript bundles were then classified under various subject heads and stored in steel cupboards. In the modern times, each and every page is first cleaned by a brush to remove the dust and then is preserved in acid free paper cover. While packing, powder of pepper, Vekhanda, Cuminam Cyminum (Kadu Jire), clove is spread between the pages. Then the manuscripts are again packed in thick acid free paper and are bound in red cloth. These are now kept upright like files.

Digitization: With the help of National Mission for Manuscripts, 80% of these manuscripts were digitized between 2010 and 2012 and the remaining were also digitized by the institute with its own funds. Thus the complete collection of 15,100 manuscripts is saved subject wise in the form of DVDs and hard disks. About 800 manuscripts in other languages and scripts are yet to be digitized.

Performance of the MRC: The Anandashram Samstha, Pune began working as an MRC from 27 January 2006.Till date, Anandashram Samstha conducted four surveys and covered 75 government and private repositories in two districts and documented 42,998 manuscripts which includes 30,001 electronic data. It has also organized one

awareness camp. As per the NMM Annual Report 2017-18 AS has uploaded data of 56158 MSS.

Staff: The Samstha has only one official to look after all the activities who received 15 days of training from the NMM. There is one peon to assist the employee.

Facilities for Researchers: Anandashram Samstha has its own elegant and magnificent stone building in the heart of Pune city, in the most densely populated and frequented area called Appa Balwant Chowk. Several researchers from various countries pay visit to the institute to study the manuscripts. Scholars, teachers, students from England, Germany, Japan and USA pay visit to the center. Hard and soft copies of the manuscripts are provided to the researchers at nominal charges according to the size of the Manuscripts. One can order copy of Manuscripts online for Research. Foreign visitors are provided single room accommodations on twin sharing basis within the institute's campus consisting of bed, table, chair and cupboard at a concessional price of 70% of average hotel room in Pune. Kitchen with utensils to cook the food along with tea and coffee at a minimum charge and washing machine facility are also offered. The campus is strictly a vegetarian area. Registered outside users from India are charged Rs. 3-5 per page. The non-ac facility has two seats in the reading room. Other facilities include photocopier, adequate storage furniture, fire fighting equipment. There is no fumigation chamber in the center.

Usage: 100-200 manuscripts are used per year for the last five years. Usage is occasional - only three or four visits are made by interested readers in a week.

Publications: For over 130 years, the institute has been publishing books in Sanskrit language. The Samstha has published 146 books and 197 volumes relating to 26 subjects in Sanskrit on Hindu religion and culture running into 64000 pages. All these books were printed after the research done under the supervision of the able Pundits (scholars) engaged by the Institute. After 1950 A.D., since Sanskrit scholars have become rare and unavailable only reprint of the old titles is undertaken. These books are in demand from Mathas and Sanskrit Universities, researchers and students from Kanyakumari to Himalayas. As was the desire of the founder, these books are sold at very reasonable prices. This conforms to its twin objectives of propagating Sanskrit and preserving and publishing Sanskrit texts.

Sr. No.	Subject	Number of Books
1	AlankarSahitya	2
2	Upanishads	24
3	Kavya	3
4	Jyotish	6
5	Mathematics	9
6	Dharma Shastra	20
7	Smruti	4
8	Neeti	3
9	Nyayshashtra	3
10	Geeta	10
11	Vividha Purana	16
12	Mantrashashtra	3
13	Mimansa	9
14	Yadnik	1
15	Yogashashtra	2
16	Ved	25
17	Vedanga	2
18	Vedānta	22
19	Vaidyashashtra	8
20	Vyakaran	6
21	Shilpa	1
22	Shrauta	14
23	Sangeet	3
24	Charitra Grantha	1

Table 4.9: Subject wise Manuscript Volumes Published

In 2016 the second part of the text *'Taittirīya Āraṇyaka'* was reprinted together with ten pages of introduction in English using, for the first time, the new desk top printing technique, whereas the other part is still waiting for the necessary funds.

Though 45% of the titles are reprinted and republished during last 25 years, the rest 55% are still waiting for reprint due to shortage of funds. Every year just one or two titles which are in demand get published according to the funds and donations available.

The institute is further exploring possibilities to invest in a project to improve on the indexing, search & referencing techniques with the help of modern technology.

4.2.4 Bhandarkar Oriental Research Institute (BORI), Pune (MRC, MCC & MCPC): BORI was established in 1917, in commemoration of the name and work of Ramakrishna Gopal Bhandarkar, an eminent scholar, known for his contributions to scientific Indology in India. It all started in 1866 when the then Government of

Bombay, began a pan India project to survey and collect rare manuscripts. Eminent scholars like Prof. George Bühler, Prof. F. Kielhorn, Prof. Peter Peterson, Prof. R. G. Bhandarkar, Prof. S. R. Bhandarkar, Prof. Kathavate, Prof. Ghate, and others were involved in this project who managed to collect more than 17,000 important manuscripts. Manuscripts thus collected were first deposited at Elphinston College, Bombay and later transferred to Deccan College, Pune, owing to its better preservative conditions. This band of scholars later founded the Bhandarkar Oriental Research Institute (BORI) in 1917, and proposed to offer even better preservation and research conditions to Lord Willington, the then Governor of Bombay Presidency. Agreeing to this proposal, the Government transferred this collection of nearly 20,000 manuscripts in 1918 to the BORI with a view to encouraging research and scholarship. Prof Bhandarkar also donated from his personal library a precious collection of about 2500 books and bound volumes of journals to BORI. Since inception, BORI has been able to add more than 11,000 manuscripts to this collection till date.

The MRC BORI: The MRC has been functioning since September 2003.

The Collection: BORI has about 30,000 manuscripts, on a variety of subjects like religion, languages, Vedic literature, grammar, music, drama, puranas, stotras, tantra, medicine and philosophical systems. The largest part of the collection containing 17,877 Manuscripts is known by the name 'The Government Manuscript Library'. There are about 11,630 manuscripts apart from the above. The total no. of manuscripts amounts to 29510. BORI has a separate section of about 400 Farsi and Arabic manuscripts containing copies of Farsi translation of the Gita and the Yoga Vasishtha, made by Dara Shukoh 340 years ago. It also has a copy of the Vishnu Purana translated into Persian by a Kashmiri Pandit, a manuscript relating to horse-breeding written by Qazi Hasan Iftakhan 390 years ago, and an original manuscript bearing the seal of the royal library of Emperor Jahangir. The Archives also contain two clay tablets of 600 B.C., similar to those found in Egypt, Assyria and Babylon.

Important Collections	
S.No.	**Description**
1.	**Kashmir Birch Bark Manuscripts** of 1875 - 76 written in Sharada script, related to Kashmir Shaivism, Jainism and the history of Kashmir.
2.	**Vishrambaghwada Collection of Manuscripts :** Believed to have belonged to

	the Peshwas and the Poona Sanskrit College, Vishrambaghwada (estd. 1821)
	Persian Manuscripts: Many illustrated and illuminated Manuscripts.
3.	**Jaina Manuscripts:** A few thousand Manuscripts related with Jaina literature and philosophy.
4.	**The Collection of Rig-Veda Manuscripts on Birch Bark:** Included in the UNESCO's Memory of the World Heritage Register at number 159.
5.	**Bhagavata Purana:** It is one of the most precious manuscripts of the Institute's collection with 128 beautiful color paintings.

Table 4.10: Important Manuscript Collection at BORI

No. of manuscripts		Miniature Paintings	Languages	Scripts	Subjects	Oldest Dated Manuscripts in the BORI Collection
Palm Leaf	Birch Bark					
350	150	1500	Sanskrit, Marathi, Arabic, Persian, Urdu	Devanagari Sharada, Grantha, Nast-aliq, Naskh, Oriya, Bengali, Kannada, Telugu, Tamil	Vedic Samhitas, Brahmanas, Aranyakas, Upanishads, Grammar, Vedangas, Sutra literature, Dharmashastra, Vedanta, Alamkara, Sangita, Natya, Kavya, Nataka, Vaidyaka, Tantra, Jaina Literature and Philosophy, Nyaya-Vaisheshika, Mimamsa, Purana, Ramayana, Mahabharata, Samkhya, Yoga, Shilpa, Kosha.	**Paper Manuscript:** Chikitsa sarasangraha. Sam. 1376; A. D. 1320 **Palm leaf Manuscript:** Upamitibhavaprapañcakatha Sam. 962; A. D. 906

Table 4.11: Bird's Eye View of Manuscript Collection at BORI

The Institute's library possesses a rich collection of 1,05, 000 books on Orientology, and regularly receives a large number of research journals.

Staff: The Institute has ten scholars and one official.

Budget and Finance: The Institute receives grants from the Government of India and the University Grants Commission. It also receives financial support from public trusts like the Sanmati Teertha and individual donors, for its specific projects.

Survey: BORI has surveyed 17 districts of Maharashtra including Raigad, Pune, Sholapur, Osmanabad, Latur, Beed, Nandurbar, Dhule, Nasik, Jalgaon, Mumbai and the complete State of Goa and documented about 55,500 manuscripts through manual data collection by covering 174 government and private repositories. It has also conducted two awareness camps. Survey and Awareness Campaigns: have been

conducted in the cities of Pune, Mahad, Mumbai, Ahmednagar, Junnar, Parbhani, Nasik, Tryambakeshwar, Raver, Baramati etc.

Prominent collections surveyed/documented till date include:

Pune	Bhandarkar Oriental Research Institute, Vaidik Samshodhan Mandal, Deccan College, Vedashastrottejaka Sabha, Tilak Maharashtra Vidyapeeth, Fergusson College, Anandashram Samstha, Bharat Itihas Sanshodhak Mandal, Forbes Gujarati Sabha, Kshirsagar Maharaj Mutt, Ahmednagar
Mumbai	Sarvajanik Vachanalaya, University of Mumbai, Chhatrapati Shivaji (Prince of Wales) Museum, Central Library, K. R. Kama Oriental Institute, Asiatic Society, J. J. School of Fine and Applied Arts, Maharashtra Archives, Mumbai Marathi Grantha Sangrahalaya
Nasik-Tryambakeshwar	Yadavashastri Takle collection, Ayurveda Seva Sangh, Dr. Deshpande collection, H. P. T. College, Tatyashastri Garge collection, V. R. Borkhedkar collection, V. S. Shukla collection, Dixit Collection, Tryambakeshwar Shikhare Collection, Tryambakeshwar, Gaidhani Collection, Garge Collection, Nasik and other personal collections
Dhule	Deepak Sitaram Rudra collection, Samrtha Vagdevata Mandir
Sangli	Sangli Nagar Vachanalaya

Table 4.12: List of Places where Survey was Conducted by the BORI

Documentation and Cataloguing: So far, thirty–five parts of descriptive catalogue covering over 12,000 manuscripts from the Government Manuscripts Library have been published. The collection is methodically documented in various formats of catalogues such as card index, one-line-catalogues and descriptive catalogues. As per the latest uploaded NMM Annual Report of 2017-18, BORI has uploaded data of 78581 MSS.

BORI has published 13 Volumes of descriptive catalogue, of 13000 Manuscripts in 35 parts: 1 - Veda, 2 - Grammar, 3 - Jyotisha, 4 - Vedanga, 7 - Dharmashastra, 9 - Vedanta, 12 - Alamkara, 13 - Kavya, 14 - Natya, 16- Vaidyaka, 17-19- Jaina.

Vital data of more than 45,000 manuscripts have been uploaded in the National Online Catalogue of Manuscripts.

Microfilming: Over a million folios including those of about 4,000 un-catalogued manuscripts have been microfilmed under the auspices of the Indira Gandhi National Center for Arts, New Delhi. In all, microfilms of more than 13,000 manuscripts are available. The negatives are stored at BORI and positives are sent to IGNCA. Digital images of select manuscripts are also made.

A complete digitization of data, documentation and images of manuscripts is planned in the immediate future.

Publications: The Critical Editions of the Mahabharata, the Rig-Veda, Vyakarana Mahabhashya, Kashika – Vritti and the Studies in Indian Cultural History, etc., are some of the prominent publications of this Institute. A number of scholars have completed their Doctoral and Post-Doctoral minor or major projects by studying various manuscripts of the BORI from various perspectives.

Series Name	Nos.	Series Name	Nos.	Series Name	Nos.
Bombay Sanskrit and Prakrut Series	20	Critical and Illustrated Editions of MahaBharata	22	Postgraduate Research Dept. Series	53
Gov. Oriental Series	17	Annals of BORI	50	Research Unit Series	19
Bhandarkar Oriental Sr.	26	Misc works	4	Other Publications	3
Descriptive Catalogue of Manuscripts	35	Reports & Proceedings of All India Oriental Conf.	39	Special Publications	8

Table 4.13: Publication of Books by BORI

BORI is arguably the richest center in Maharashtra in terms of manuscript collection. And so understandably the NMM has recognized BORI as an MRC, an MCC as well as an MCPC.

Manuscript Conservation: Established in Sep 2003, the MCC of BORI has so far taken preventive care of 1217 manuscripts and given curative conservation treatment to 29 manuscripts. Apart from carrying out preventive and curative conservation of various manuscript collections, the MCC of BORI also imparts training and provides expert advice in preventive conservation for personnel working in different institutions and private collectors.

S.No.	Activity	Institutes
1.	Preventive Conservation	Manuscript Collection donated to the institute by Dr. Mundi is being subjected to Preventive Conservation and rearrangement in storage and upkeep. **Pune**: Anandashram Samstha, Bhandarkar Oriental Research Institute, Bharat Itihas Samshodhan Mandal, Deccan College Post-Graduate and Research Institute, Vaidik Samshodhan Mandal, Vedashastrottejaka Sabha, Fergusson

		College, Alandi Devasthan Trust, Alandi, Pune. **Mumbai**: Forbes Guajarati Sabha. **Nasik**: Girish Takle's Personal Collection, H. P. T. College, Sarvajanik Vachanayalaya, Shankar Lakshman Gargeshastri's Collection, Siddheshwarshastri Khedkar Personal Collection, Sunder Sanskar & Swadhyay Mandal, Mehta Personal Collection, Gaidhani Personal Collection, Ayurveda College, Indian Institute for Research in Numismatic Studies, Anjaneri, Nasik. **Dhule**: Rajwade Samshodhan Mandal, Samarth Vagdevata Mandir. **Nagpur**: Nagpur University, Kavikulguru Kalidas Sanskrit Univ., Ramtek, Nagpur, Bhonsala Vedashastra Mahavidyalaya, **Sholapur and Pandharpur:** Private collections of Shri. Dvaipayan Varkhedkar, Shri. Balachandra Deodhar, Shri. Prakash D. Kulkarni, Shri. Anil Shankar Badve, Shri. Vasantrao Borkkhedkar, Shri. Bhanudasmaharaj Deglurkar, Shri. V. N. Utpat, Shri. Bhimacharya Varkhedkar, Shri. Madwanna, Mrs. Aklujkar, Shri. Anant Date, Shri. Bajirao Joshi, Shri. Arun Moholkar. **Jalgaon**: Late Shri. Deenanath Maharaj Collection, Raver, Dt. **Kolhapur**: Shivaji University, Kolhapur and six personal collections in Kolhapur.
2.	Curative Conservation	1. More than 10000 folios of the Persian manuscripts of the BORI. 2. 10 selected MSS of Bharat Itihas Sanshodhak Mandal, Pune. 3. 8 selected Mss of Anandashram Samstha, Pune 4. A unique written (not engraved) Copper Plate at the custody of Shri. S. K. Gurjar (Padhye) from Rajapur is treated successfully to remove various layers of Patina. The Copper Plate is an Important Historical find.

Table 4.14: Preventive/ Curative Conservation Carried out by BORI

4.2.5 Prajna Pathshala, Wai, Satara (MRC and MCPC):(Bhate, 2018) ("Sarvakaryeshu Sarvada," 2020)

Wai was an important city during Maratha rule. It belonged to the Krishnakath tradition with five old-fashioned traditional schools where many great scholars lived. Krishnashastri Paranjape, an ardent Pandit, who retired in 1891 at the age of 35 and became 'Prajnananda Saraswati' used to run a Vedic school in Wai. In the year 1898, a 21-year-old man named Narayan Marathe came to Wai and became the disciple of

Prajnananda and under the tutelage of Swami Prajnananda, studied many disciplines like Vedanta, Nyaya, Veda, Kavya Upanishads and Gita. At that time, plague was raging in and around Wai and Prajnananda passed away in 1904 due to plague. After Prajnananda's demise, Narayan Shastri started giving his own discourses. He started teaching according to the ancient Gurukul system and 20-25 students started taking ancient science lessons from him. As the Narayan Shastri's fame spread far and wide, many young students started coming to learn from him and a traditional Sanskrit school of learning called 'Prajna Math' was started which was built around the Samadhi of his Guru.

While this was the case in Wai, during that time, Samarth Vidya Mandir National School was established in Talegaon. There were about 150 students and 15 teachers living in the school's ashram. In 1905-06, the national education movement was also gaining momentum in Maharashtra. After consolidating their rule in India, during that time, the British began to dismantle the traditional education system and introduce European teaching methods in English. In 1910, the Samarth Vidya Mandir was also closed down by the British and the students and teachers joined the Prajna Math in Wai. Mahadev Shastri Divekar and Dinkarshastri Kanade and other teachers under the chairmanship of Narayanshastri Marathe, decided to transform the Prajna Math into 'Prajna Pathshala'. The aim was to start a new secondary curriculum while continuing the traditional school and produce students who were dedicated to the national movement and skilled in modern learning. On October 6, 1916, the day of Vijayadashami, Prajna Matha became Prajna Pathshala and on July 21, 1920, it became a registered organization as Prajna Pathshala Mandal. Scholars like Tarkatirtha Laxman Shastri Joshi, Vasudev Shastri Konkar, Pandurang Shastri Goswami were groomed here. However due to lack of students, the secondary branch of the school was closed in 1935 and the traditional branch was closed in 1956.

The Collection: As per the foreword written by the Laxmanshastri Joshi for the volume titled the 'Descriptive Catalogue of Sanskrit Manuscripts' there are about twelve thousand manuscript bundles (books) available in the Pathashala (Joshi, 1970). The list, as made available in that catalogue is as under:

S.No.	Subject	No of MSS
1.	Veda and Vedic	1462
2.	Vedangas	1419

3.	Smriti	2539
4.	Itihasa Purana	512
5.	Philosophy	1274
6.	Bhakti	1238
7.	Tantramantragama	548
8.	Kavya	448
9.	Vyakarana	323
10	Kosa	84
11.	Chanda Shastra	17
12.	Alankara	68
13	Natya	3
14	Geeta	3
15	Shilpa	3
16	Arthashastra	4
17	Kridashastra	1
18	Kamashastra	4
19	Aayurveda	150
20	Jotisha	508
21	Sankirna	3
22.	Prosody	1
	Total	10612

Table 4.15: Subject wise list of Manuscripts

Age of the Manuscripts: The manuscript library contains books written during the last five hundred and fifty years and most of the books are more than two hundred years old. While the dates of 3558 manuscripts are known the dates in respect of remaining manuscripts is not known. There are two manuscripts which are oldest among the collection and are written in Saka 1455 (1533AD). One of them is a Vyakarana text titled Kāsikā written by Jayāditya and Vāmana. The other is the Kumāra Sambhava of Kālidāsa copied in the same year.

S.No.	Period	No. of Manuscripts
1.	Earliest (Before 1300 A.D)	None
2.	1301A.D-1600 A.D	11
3.	1601.A.D-1900 A.D	3428
4.	190l.A.D-1947A.D.	93

5.	Number of manuscripts of which the dates are not known	7054

Table 4.16: Period wise distribution of MSS

Completeness of the manuscripts: Based on the entries in the descriptive catalogue, it is estimated that about 15% of the manuscripts in the collection are incomplete.

Collection Development: Most of the manuscripts originally beologed to the families of learned tradition of the ancient town Wai, famous for ancient Sanskrit learning and were received as gifts by the late Swami Kevalananda Saraswati, the founder of the Mandala.

Academic Work and Publications: About 30 books, praised even by the Western scholars, like 'Mimansakosh', Tarkatirtha's 'Development of Vedic Culture', 'Philosophy of History' etc., that ran into more than four and a half thousand pages were published by Swami Kevalananda alone.

The important contribution of Prajna Pathshala Mandal is the 'Dharmakosh' started by Swami Kevalanand Saraswati in 1925. The main purpose of the ‘Dharmakosha’ was to collect and compile comprehensive and indisputable evidences of many incidents of reformation in Hinduism since millennia to prove in ample measure that Hinduism was always open, dynamic and constantly changing in the course of time and always followed ideological and moral progress. The Dharmakosha has gained international recognition as the standard text on ancient Indian culture. Volumes of 'Dharmakosha' are in demand in USA, Germany, France, Japan and Australia. The Dharmakosha was envisaged to be a 11 volume work, each divided into two to six parts (each part a separate Grantha of 1200 to 1500 pages), running into 40 such Granthas (parts). Laxman Shastri Joshi who was a student of this Pathshala obtained the degree of 'Tarkatirtha' in jurisprudence, and became Tarkatirtha Laxmanshastri Joshi, becoming the successor of his Guru. Tarkatirtha Shastri took the responsibility of compiling the Dharmakosha encyclopedia from 1931 and published four of the 11 volumes in several parts. He alone authored and compiled about thirteen thousand pages.

However, in the last 90 years, only five volumes (called kandas) of Dharmakosha in 26 parts could be published. This slow progress is attributed to want of funds and poor availability of scholars in the field. Till date, the following five kandas have been published in 24 parts as given below: 1. Vyavaharakanda - 3 parts 2. Upandishad

kanda - 4 parts 3. Sanskarkanda - 6 parts 4. Rajanitikanda - 6 parts and 5. Varnashramadharma kanda - 5 parts.

After the Samadhi of Swami Kevalananda, the work of this Dharmakosha project continued under the guidance of late Shri. Tarkateerth Laxmanshastri joshi, late prof. M. P. Rege.

Future Plans: Presently the Dharmakosha project is in progress under the guidence of Dr. Saroja Bhate, a well known Sanskrit scholar from University of Pune. The Mandal plans to prepare and publish in the coming years, the last part of the fifth kanda and the remaining six kandas in 20 parts. The work of the sixth part of Varnashramdharma- kanda is almost complete.

The planned work on the remaining kandas is: 1. Varnashrama- dharma Kandam: 2 parts (6th and 7th) 2. Shuddhi shradha kandam: 4 parts 3. Prayashchitta kandam: 4 parts 4. Shanti Kandam: 4 parts 5. Puranagamdharma kandam 3 parts 6. Samaya kandam 2 parts 7. Moksha kandam 1 part.

The school has been publishing an ideological magazine 'Navbharat' started by Shankarrao Deo in October 1947. The main feature of this magazine is the articles reflecting on contemporary social and political issues. Books like 'Prajnaprabodh', 'Sanskriti Olympiad', which tell the history of the Prajna Pathshala Mandal, and 'Dharmasar', a compilation of the Dharmakosha are being published.

The school has been publishing excellent texts. Three editions of Tarkatirtha Laxmanshastri Joshi's book 'Development of Vedic Culture', Dr. Sumant Muranjan's book 'Priestly Dominance and Social History of India' is a unique book. Dr. W. L. Vaidya's book 'The Rise and Spread of Buddhism', Sadashiv Athavale's book 'Charvak: History and Philosophy', Reggae written ‘Ihwad and Sarvadharmasambhav’, Gangadhar Waman Lele's ‘Prasthanbhed’ and Dr. M. A. Mehendale's 'Ancient India: Society and Culture' were published by Prajna Pathshala Mandal. These books are appreciated as the standard of ideological writings in Marathi.

The school has published invaluable, original texts treating Indian traditions, culture such as Marathi translation of 'Advaitasiddhi', 'Yashwantrao Chavan Abhinandan Granth', 'Sanshodhan Sadhana', 'Ancient and modern history of Arya festivals', 'Vagishwari', 'Philosophy of history', 'Gita therapy', 'Hindu religious tradition and

social change' 'Five Book Examinations', 'Discrimination: An Understanding', 'Collingwood's Theology: A Commentary', 'Religion: A Rethinking', 'Tarkatirtha Laxmanshastri Joshi: Work and Thought', 'Vinoban's Sanskrit Symbols' Democracy: 'Discussion in Indian Context', 'Review of Hinduism and Criticism of All Religions', 'History of Western Ethics', 'Logic of Literature', etc.

It has recently celebrated its centennial existence for its cherished motto of *'Dharma visvasya jagatah pratishtah'* meaning 'working with a motto to establish the world in the order of Dharma'. British Library had carried out microfilming as well as digitization of their manuscripts through the mediation by the Marathi Manuscript Center. 359 manuscripts were digitized and a copy taken by the British Library. These manuscripts were initially held on permanent loan by the Marathi Manuscript Center (MMC), but were ultimately fully donated by the Prajna Pathshala Wai to the MMC.

Catalogue: The descriptive catalogue of Sanskrit manuscripts edited by Laxmanshastri Joshi is published in two volumes in 1970. It consists of fifteen columns as recommend in the government of India pro-forma and has the following columns: S.No., L.No., Title of Work, Name of Author, Name of Commentator, Substance, Script, Size in C. M., Folios, Lines per page, Letters per line, Extent, Condition, Age and Additional Particulars.

Grant-in-aid: The Pathashala received grant in aid for the publication of the descriptive catalogue from the Ministry of Education, Government of India.

Publications: Based on the manuscript collection that the Pathashala has, several significant volumes have been published:

Under the Editorship of Shri Laxmana Shastri Joshi	
1.	Hindu Dharmachi Sameeksha (1942), Dharmakosh: Upanishad kandam khand-2, part-2&3 (1949) Part 1 (1950), Dharmakosh Sanskar Kandam Khand 3 part 1 (1959), Dharmakosh Rajneeti Kandam Khand -4,part 2 (1973), part 3 (1974), part 6 (1979), Dharmakosh Sanskar Kandam Khand 3 part 2 (1980).
Under the editorship of Pandit Govinda Shastri Kelkar	
2.	Dharmakosh Varnaashram Dharmakandam Khand-5 part 2 (2000).

Table 4.17: Prajna Pathshala Mandal Granthmala

Digitization: Thanks to the efforts of the British Library under its project 'Endangered Archives Programme' digital copies and microfilms of about 200 manuscripts were produced under the project EAP023. Another set of 359 manuscripts of the Prajna Pathshala collection were microfilmed and digital copies produced under the project EAP248 (*Preserving More Marathi Manuscripts and Making Them Accessible - Major Project (EAP023)*, 2017). While one copy is collected by the British Library surrogates are deposited in the Marathi Manuscript Center, Deccan College, Pune.

4.2.6. Rajwade Samshodhan Madal, Dhule (MRC and MCPC): VK Rajwade was a highly reputed historian and writer, who enduring great hardships, published authentic sources for documenting the history of the Marathas. For this he travelled from Thanjavur to Kabul. He not only studied history but had an in-depth knowledge in linguistics, grammar, ancient literature, modern literary etymology, vocabulary, metallurgy, etymology, poetry, palaeography, archeology, chemistry, geography, coins, copperplates and inscriptions. Rajwade lived in Pune for a long time and was instrumental in the establishment of the Bharat Itihas Sanshodhan Mandal there in 1910. He wrote 22 volumes of the 'History of Marathas' and published it under the title *'Sadhane'*. He also wrote an introductory note of 120-125 pages titled 'Maharashtra Bhushan Shahaji Raje' for the book he edited titled 'Radha Madhav Vilas Champu' authored by Jayaram Pindye. It is a verbal depiction of life and times of Shahaji Raja.

At the request of Dhule based lawyer Shankarrao Deo, well-known historian-lawyer Bhaskar Vaman alias Tatyasaheb Bhat and lawyer Govindrao Chandorkar who were his friends, Rajwade, a sannyasin, came to Dhule with some boxes full of documents and manuscripts. With the help of his friends like Samarth Bhakta Shankarrao Deo (of Samartha Vagdevta fame), history researcher Govindrao Chandorkar and Tatyasaheb Bhat, Rajwade continued his research work tirelessly. Satkaryottejak Sabha began to publish 'Aitihasik' journal to publish the articles of Rajwade. In Dhule, Rajwade completed two important books, Dhatukosh and Namadvyutpatti Shabdakosh. He researched on the erroneous dating of Indian history by the English and published with proof the right history. He wanted to work for 100 years. After living for 26 years in Dhule, he died on 31st December 1926. After the demise of Rajwada, I V K Rajwade Research Board was established in Dhule on January 9,

1927, in his name so that his great work in history and allied sciences could continue unabated. The main objective of this organization is to carry on the work left behind by the historian, that is, to preserve, conserve, study, classify, research, publish and propagate the collection. Subsequently Rajwade Library, Rajwade Museum came into existence in the stone building which was inaugurated on 5th January 1932. Tatyasaheb Bhat who was the father of these three organizations, with a view to ensure permanent financial support for research, established Rajwade Mandal People's Co-operative Bank. The bank's bye-laws provide for increased funding to the Board, making it possible for the Board to publish some manuscripts. The Mandal comprises of 1. Manuscript Gallery, 2. Bhava Bhat Reference Library, 3. Rajwade Museum, 4. Vasudevashram for visitors coming from outstation, 5. Rajwade Library, 6. 5000 sq. Ft. Tribal Cultural Art Gallery, 7. Bhat Smriti Hall and Balasaheb Mundada Hall for cultural events in the city, 8. Research Gallery and Departments.

Many foreign scholars visit the Mandal for studying the rich resources. Accommodation is made available in the Vasudevashram of the Mandal. The Rajwade Mandal is mentioned in the Dhule District Gazetteer, Directory of Indian Museums. The Center, which has been developing for more than 91 years, was approved by Pune University as well as North Maharashtra University as an affiliated center. The Rajwade Mandal is also an information center of the Government of India's Council of Indian Historical Records Commission, Government of India (Delhi). In recognition of the incomparable work of Historian Rajwade, the Central Government has issued a postage stamp, First Day Cover and Information Brochure in his honor in the year 2003.

Rajwade Museum: As the Rajwade Museum is growing, a new building has been constructed on the south side of the original building through people’s contribution. This antique museum has eight galleries. It has a collection of antiques and showcases various archeological remains, including coins, arms belonging to Maratha–Mughal period, cannons, original documents and letters of Chhatrapati Shivaji Maharaj, Emperor Shajahan and Mumtaz Mahal’s official Gazettes, illustrations and paintings in natural colours belonging to the Peshva period based on the ragas of Indian music, musical Vishnu idol in sandstone, Lakshmi holding the rosary and water pot in the idol Padmasana, Shankara-Parvati, Varaha, Shani seated in a chariot, copperplate, birch leaves, maps, archaeological remains, Idols of

Janardhana, Keshav, Lakshmi-Vishnu, Shankara-Parvati, Varaha Avatar, Praniroop Varaha, Rising Sun, Declining Sun, Jain murti, Marble Strip, Padmavati, Prabhaval, Ganesh, Gajendramoksha, Mahishasur Mardini, Toran, Gaj raj, Gajalakshmi, Ek Pashan, Lalat bimb, Dvar shakha, Gaja talu, Sura sundari's Head, Yakshi, Devi, Yaksha-Replica, children's brass toys, *laman* lamps, various garland of lamps, collection of foreign notes and coins and numismatics from the Shiva period - Mughal period and Gupta period, entrance pillars and other artefacts of great importance. There are also 75different idols. The museum houses tribal arrows, spears, fishing nets, paintings and ornaments. About 40 murals in natural colors based on the ragas of Peshwa songs attract the audience. Along with the picture of the game Ganjifa played during the Maratha period, there is also Songatya, pointed guns, British revolvers, British and Maratha and Mughal swords, cannon balls.

Cannons: A five metal cannon measuring 187 cm. length. According to the Persian text, the cannon was made by artisans to pay a visit to Emperor Jahangir. The second largest cannon is made of iron and is 185 cm long. Medium range cannon, small cannon 94 cm. length, medium iron cannon 175 cm. length. The cannon is about 1 foot long and is the size of a small pipe.

Late B. V. Bhat Reference Library: The Reference Library has a rich collection of more than 6070 rare, useful and valuable books on bibliography, language, lexicon, history, historical tools, gazetteers, numismatics, genealogy etc. Membership is offered for a fee to study books. Reprography facility is available.

Historian VK Rajwade Sanshodhan Mandal Library: The building is rich with 25337 rare books in Marathi, Hindi and English books, on anthology, historical novels, biographies, health, astrology, employment, literature for women and children. Also 25 dailies and evening dailies including 9 daily newspapers, 55 magazines, 22 weeklies and 9 fortnightlies are available for free reading in the library. Membership is open to the general public. The library organizes cultural, educational and social activities.

'Sanshodhak', a research quarterly has been published as a platform for history researchers for the last 86 years. The annual subscription of Researcher Quarterly is Rs. 400 / - only and the life subscription is Rs. 4000 / -. In the same fee, membership for Kailash Vasi Bhatt Reference Libraries is also granted. Reference books can be

studied at the institute during office hours. Sanshodhak quarterly has been honored with the Maharashtra Foundation Award.

Manuscripts in Rajwade Museum: Another very important feature of Rajwade Museum is manuscripts. The manuscript gallery of the Rajwade Museum is very rich. Some of these manuscripts have been published and some of them have been exhibited. There are a total of 3050 manuscripts in the library of which 968 manuscripts are in Marathi. The Marathi manuscripts deal with various subjects such as Marathi Kavya, Marathi Vedant, Katha & Purane, Stotra &Aaratya, Jyotish, Vaidyak, Charitre, Gadya Marathi, Marathi Kosh, Durmil Marathi, Kamshastra, Bhugol. It includes Rukmini Swayamwar, Illustrated Gita with color picture, Aitareya Brahmin, manuscripts written by Justice Ranade and Alan Hume, authentic manuscripts of Shivaji period, independent edict of Shahjahan Badshah and Mumtaz Mahal regarding Erandol Pargana, edict of Emperor Akbar, maps, Seals of all the kings of Maratha Empire, coins, Illustrated description on them, Bhurjapatra, copperplates written in Brahmi, Devanagari and Modi script (Vakataka period 9 in total). The archives of the Research Mandal contain rare and very important manuscripts dating back to the 12th century in Modi script, Persian script and Nandurbar archives. Of the 968 Marathi manuscripts, 732 are complete and 236 are incomplete. The subjects range from Purana/Itihasa, Historical, Philosophical, Mantra/Tantra, Vedas/Upanishads, Other Religious Texts, Astrology, Language/Grammar, Ganitha, Literature, Medicine (Ayurveda, Siddha, etc.), Music, Yoga, Shilpa Shastra. The language wise division of manuscripts is: Sanskrit =2067, Marathi = 968, Tamil = 1, Gujarati =09, Hindi =15, Kannada= unknown Telugu = unknown and Persian= 3. Script wise, the manuscripts are in Devnagari (968), Tamil (1), Modi, Telugu, Malayalam, Persian =3, Gujarati (9), Kannada (unknown).

S.No.	Language/Script	Subject Categories
1.	Marathi	Vidya and Kala, Vedanta, Stotra, Sthuti, bhoopal, aarti,Devotional, History, Prose- Bakhar (biograpy of kings), Astrology, Puranic Stories, Kosh, Letters/documents, Mahatmya, Yatra, books on Yagna
2.	Modi	Arithmatic, Income-expenditure statmes, Goemetry, Bakhar (biograpy of kings), Jantri, Letters/documents, Puranas
3.	Sansksrit	Yagna, yagnik vidhi, Vyakaran (Grammar), Vedanta, Ved, Sannyas Paddhati, Smarta, Smarta Vidhi,Stotra, Puranokt puja, Dharma Shastra, Prayaschitta, Smriti,Hridaya, mantra, Katha (stories), Kosh, nitya

		karma, Paddhati, Kavach-mantra, Mahatmya, Prayog, Puranas
4.	Hindi	
5.	Farsi	Letters/documents

Table 4.18: Subject Categories under Various Languages/Scripts

Collection Development: Center's written collection development policy adopted in 09-01-1927. The entire collect is thanks to the efforts by Shri. Rajwade. The Institute makes occasional efforts in acquing its manuscript collection. Examples include Bhide collection (Historical sources), Historical documents collected from Kathardekar, Nagpur Collection.

Budget: The Mandal reports that it does not experience financial limitations affecting the manuscript collection. It accrues funds through private donations, library membership and book sales. It had received building grant from RRRLF, Department of Culture, New Delhi for Development of Museum in 2007. At present the Mandal allocates more than 9 lakh rupees per annum to function.

Organization: The collection is housed in a separate building and separate floor. The manuscripts are well organized in cupboards wrapped with cloth, and in steel almirahs and catalogued material wise, subject wise, classification wise, language wise, acc. No wise, scheme wise and open order. The collection is partially classified. Catalogue titled 'Rajwade Sanshodhan Mandiraateel Marathi Hasthalikhit granth va durmil granthaanchi soochi' is published.

Office timings: 9: 30 am to 1:00 pm & 4: 30pm to 8: 00.p.m. Weekly Holiday: Sunday.

Equipment and Facilities: The center has thermometer, photocopier, scanner, fire extinguisher, etc. One cubicle and more than 25 seats are present in the Reading Room. The Mandal has adequate reading space, A/C, good ventilation, furniture for storage.

Access: Only registered visitors permitted entry into the Mandal. Scholars, Teachers, Writers, Students, Translators, Librarians, General Visitors from India and abroad visit the Mandal, attracted by its rich collection. Twenty rupees per visit is charged from the user. Visitors visit almost on daily basis. The usage of manuscripts is described as occasional by the Mandal officials. Lack of knowledge of language of

manuscripts and inability to understand script are shown as the main factors for poor use of manuscripts.

Awareness Campaigns: General public are sensitized through seminar, information on website, brochures, bulletins/newsletters, special lectures, etc.

Digitization of historical documents in Rajwade Research Board: There are a total of about three lakh historical documents and rare manuscripts compiled by historian Rajwade in the Rajwade Mandal. These documents are carefully preserved by the organization with a view that they should be available to scholars from all over the world. The digitization work of these historical documents of the organization has been completed with the financial support of Yashwantrao Chavan Pratishthan Mumbai which donated about Rs 13 lakh. The digital content has been made available on the new website of Rajwade Mandal.

Financial Problems, Shortage of Staff, Shortage of Facilities are the main problems reported by the Mandal. Insect infestation is also reported.

Publications: The institute has published more than 80 publications demanded by scholars, researchers and historians. List of Rare Books published by the Mandal include: 1) Letters of Chatrapati Shivaji Maharaj 2) Polity of Shivaji, 3) History of Rajwade, 4) Complete works of IVK Rajwade Vol 4 to 10, 5) Sources of of Maratha History 5 Volume (Marathi & English), 6) Gitai Dharmsaar, 7) On the occasion of World Childrens' day, 8) Amritanubhav, 10) Smriti Shalaka, 11) Catalog, 12) Nagpurkar Bhosale's secretarial statements, 13) Researcher - Congress Shatabdi Special edition, 14) Dnyaneshwar Nitikatha, 15) Janaki Swayamwar, 16) Yoga Chintamani, 17) Vedia Nagesh, 18) Navras Ragamala (Sanshodhak), 19) Sources of Tatya Joga's history, 20) Rare Set (Sanshodhak), 21) Nirukta. Other Publications include: 22) Essay collection -1 23) sources of Nagpur State History 24) Sources of History of Khandesh Malwa, 25) Tribal Uprising. In the year 2010, former Hon'ble President of India Pratibhatai Patil published 14 invaluable books of this center at Dhule.

Historian VK Rajwade Research Board, Dhule Institute has been working for more than 86 years with the aim and purpose of collecting, preserving, protecting, conserving, researching and publishing the historical sources of the establishment.

Planned ambitious projects of Rajwade Research Board: The Mandal plans to establish a Tribal Cultural Art Gallery, Royal Gallery consisting of original photos of 175 nobles and kings. Another ambitious project of the Mandal is the publication of Sources of History of Marathas written by Historian V.K. Rajwade in Marathi in 22 volumes and translated into English by Dr. Vitthal Trimbak Gune former Chairman of Goa Archeology, in 5 abridged volumes. These volumes are published with the financial support of Bhanwarlalji Jain, a famous industrialist of Jalgaon.

4.2.7 Fergusson College, Pune (MRC and MCPC)

The library building of Fergusson College comprising of two floors was constructed with a munificent donation of Rs. 1.61 Lakh from the Wadia brothers in May 1929 and is named Bai Jerbai Wadia Library. It is one of the oldest librariesin the country. It is one of the three main buildings of the college. The B.J Wadia Library is one of the largest libraries among the colleges afficiated to Pune University and contains about 2.5 lakh books. Total Area of the library is 15,900 sq. ft. The entire first floor of the Library admeasuring 6,500 sq. ft is designated as reading hall that can accommodate 450 students at a time. This is perhaps one of the largest Reading Halls in Maharashtra. On the ground floor, there are 7 cubicles for teachers.

Staff: The library has 18 library staff consisting of one Assistant Librarian, two Library Clerks, 12 Library Attendants.

Working Hours: Library is open between 9 am to 6 pm on all working days. Reading Hall of the library all is open on working days between 8 am to 6 pm.

Gratis and Donations and Financial Assitance: The Library has become fabulously rich in its collection over the years, thanks to the several research scholars and book-lovers who have donated a large number of their own personal collections to the library e.g. Wrangler R. P. Paranjpe, Dr. G. S. Mahajani, Prin. S. V. Kogekar, Prof. R. S. Joag, Prof. D.D Wadekar and many others.. In 1907, the collection of Raosaheb V.N. Mandlik was donated to the library by his son Shri. N. V Mandlik. The library of FC received UGC funding first in 1955, and later in 1982. In 1974, the library received Rs.20,000 as a generous endowment to set up the"Prof.V.G. Kale Text Book library". In 1999 The well-known Industrialists Kotecha family donated the valuable Osho Collection to the library.

The Collection: The library has a valuable and rare collection of books and manuscripts. The library has a total collection of 2.5 lakh books. The Library is known for its very old and rare collections like Mandlik Collection, Bramhe Collection, Osho Collection and Paul Tesla Collection. These old manuscripts are now digitized with the support from National Archives of India, Ministry of Culture, Government of India. There are rare books in print form. There are 1396 paper manuscripts and 55 written on palm leaves and silk cloth in the collection. The library is also blessed with a remarkable collection of statues and posters, dedicated to outstanding national leaders and educationalists. There are old trophies, cups and medals received by the college on different occasions. All these are displayed in the library.

Preservation: A lot of care is taken to preserve these books in the library in a good condition. Preservation of manuscripts and rare books is partly finished. Sheaf catalogue- the oldest form of catalogue is also available and preserved.

Digitization: The FC Library has been funded by National Archives of India for digitization of old and rare manuscripts in 2014.

4.2.8 Shri Samarth Vagdevta Mandir, Dhule (MPC, MRC and MCPC):

The roots of Sri Samartha Vagdevta Mandir go as far back as 1902, when a leading advocate of that time, Shri Nanasaheb Deva, also known as Shankar Shri Krishna ‘the one man army’ began field surveys of manuscript locations in Maharashtra. Fondly called the ‘Samarth Hrudaya Deva’ by his loyalists, Nanasaheb Deva started the research work of Samarth Sahitya from 1902 through Satkaryottejak Sabha to inspire nationalism. Deva did a commendable job of collecting, preserving, researching and publishing the available documents. He was a strong proponent of the principle 'life and vitality of the nation lies in remembering Shiva-Samarth and forgetting it is its death'. Shri Samartha Vagdevata Mandir, Dhule was officially setup later in 1935. The Mandir was established with the sole aim of surveying locating, collecting and preserving the manuscripts belonging to the era of Chatrapati Shivaji and his mentor Shri Samarth Ramdas. The Mandir also works towards facilitating researchers and support publication. The Mandir is managed by a President supported by 11 board members. Though the Mandir is set in a traditional temple structure it is not a temple per se but is meant to facilitate research about medieval manuscripts.

The Collection: Nanasaheb Deva obtained manuscripts from about 1100 monasteries of Sri Samartha Ramdas Swamy spread across the vast nation during the Sri Shiva-Samarth period obtained for 50 years. All these documents have been scientifically classified and kept in as a single collection. There are about 4,000 revised manuscript bundles. From these documents, information about more than 800 literateurs and their compositions has been newly acquired by Maharashtra literature. Spread on a surface, the area occupied by these four lakh folios will be more than ten crore square centimeters. The number of Modi documents present in the Mandir is significant. At present about 20,000 documents representing the social, political and religious events that were taking place during Shivaji and Peshwa periods, and also from British rule period are available. Some documents even date back to pre-Shiva times. There are also Persian, Arabic and Urdu papers. Yantra drawings and mantras in the manuscripts are worthy to be studied. If patient scrutiny of the manuscripts is made, they would reveal some very astonishing things.

Not only all the literature of Srisamartha, and his lineage of disciples is present in the Mandir, but it also contains detailed study carried out on the literature produced by more than 800 saints of other sects belonging to those times. The Mandir contains the original letter of Chhatrapati Shivaji with the signature and stamp. The Mandir has in its pride possession, Valmiki Ramayan written by Shri Ramdas during his penance in his childhood consisting of 1820 folios and an illustrated Bhagavadgita. The Mandi also contains Sri Vir Hanuman's illustration drawn by the immediate disciple of Shri Samartha Ramdas, Sri Kalyan Swami. It also has the complete poetry of Sri Samarth in the handwriting of Sri Kalyan swami.

Cataloguing: Descriptive cataloguing of these manuscripts with details regarding length and width of the paper, the lines and the letters in the paper, have been documented. The catalogue contains four printed volumes of 1400 pages. The listing for the first two volumes is done by Nanasaheb Deva and the next volume is carried out by Shivajirao Bhave. Work on a more detailed cataloguing is underway. Presently, 13 parts of the new descriptive list of 536 bundles are ready.

Publication: During his lifetime, Nanasaheb Deva published 78 books with extensive notes and extensive editorial pages based on research. Dnyaneshwari of pre-Eknath period, original version of Dasbodha, tri-volume history of Srisamartha, volumes of Sri Sampradayik historical documents, research volume, 4 volumes of Das vishram

dham and many unknown Saraswat poems and spiritual compositions - about 27000 pages of unique texts were published. After a gap of 100 years, owing to various reasons, the Mandir finds it difficult to publish even a single edition of these books.

Historian Rajwade was of the opinion that, compared to other sects, 95% of the research on Sreesamrtha Sampradaya and its monasteries, the work of its monks was accomplished through the indefatigable work of Deva. Deva, however, did not approve of this view and believed that not even 100th part of works could be accomplished. Deva thought that if only 20-25 hardworking youths would spend 20-25 years of their life in researching on the Samartha Sampradaya only then the work could be completed.

Budget: The center is run with the gratis and the donations received from the public.

S.No.	Project	Estimated Cost (in Rs.)
1)	*Ramen Ramdasen Likhitam Sri Valmiki Ramayanam* Research and Publication Project.	75,00,000
2)	Brahmarshi Vidyavachaspati Datta Maharaj Kavisvar research Scholarship (to invite eminent scholars for research of manuscripts in the institute for a fixed period of time).	30,000,000
3)	Manuscript bundles conservation corpus fund Preservation, Modern Conservation techniques, cataloguing research and publication.	30,000,000
4)	Various On-field socially useful activities and projects such as Panchakoshatmak personality development, self management, Indian psychology, counselling The actual work-plan for these projects at various levels.	10,00,000
5)	Extensive training facility for new young Ramdasis for overall progress of Maharashtrian Dharma.	15,00,000
6)	Development of Moral education project and its effective implementation, celebration of various festivals and occasions, lecture series for social transformation, conduction of competitive exams and their effective managemet.	10,00,000
7)	Strengthening of Indian Educational Research Center, planning of various socially useful activities, execution of social survey project at various levels based on available manuscripts of Shree Samarth Vagdevata Mandir and its implementation.	10,00,000
8)	Shree Samarth Vagdevata Mandir Development of Architecture Currently only collection of manuscripts is available in the form of museums, exhibitions, study halls, special rooms for preservation of important manuscripts, proper protection system in the form of architectural	75,00,000

	development repairs, renovations etc. However, this and many other such ventures must have a large amount of funds.	
9)	Corpus for daily expenses	20,00,000
10)	Study and transliteration of manuscripts written in Modi, Arabi, Farshi into Devnagari.	15,00,000
	Total budget	**3,00,00, 000**

Table 4.19: Various Projects Currently in Progress in Shri Samarthvagdevata Mandir and their Cost Estimate

4.2.9 Moolji Jaitha (Autonomous) College, Jalgaon (MRC and MCC):

Moolji Jaitha (Autonomous) College was established in 1945 after a year its parent body, the Khandesh College Education Society (KCE Society) was established on 16th September 1944. The Society was established with a view to provide quality education to the students of Khandesh region. This college, which has completed 75 years of its illustrious existence, is a NAAC reaccredited A grade College that has been a recipient of the coveted College of Excellence status from the UGC. Its parent body the KCE Society runs about two dozen educational institutions offering academics from KG to PG. The library of the College is the largest in Khandesh region, with over 1,75,000 books and subscribes to about 70 periodicals. In 2009-10 the researcher has been able to get a grant of Rupees one lakh from the National Archives of India for digitizing rare books in the library which are over 75 or ore year old.

The library has about 340 paper manuscripts, 227 parliament debates from 1948-1991 and 27 volumes of the X edition of the Encyclopedia of Britannica. The researcher, who is the Director of the Knowledge Resource Center of the said institution, has been able to collect manuscripts from various sources and documents totaling to about 340 numbers from various individuals and mutts. In the year 2016 the researcher received funding from the North Maharashtra University to carry out a research project titled ‘Locating, Conserving and Digitization of Manuscripts found in Maharashtra’ under the Vice Chancellor's Research Motivation Scheme. The research culminated in the year 2018. The National Mission for Manuscripts, New Delhi has approved the proposal submitted by the researcher for establishment of a Manuscript Conservation Center for conservation and digitization of manuscripts in the college library. In the year 2018, a Memorandum of Understanding is signed and the MCC

came into being. In the year 2019 the NMM has recognized the college as an MRC as well. A MoU is also signed in 2019 with NMM for digitization of manuscripts.

Budget: The center is funded for its conservation activities by the NMM since December 2018. No additional budgetary allocations are provided by the College as of now.

Staff: The Center is run by the Project Coordinator (researcher) with the help of a Conservator, one Assistant Conservator and a Technical Assistant. The salary is received through grants from the NMM.

Training: The Project Coordinator, Conservator, Assistant Conservator and Technical Assistants underwent a five-day preventive conservation training and a one month Advanced Curative conservation training.

The Collection: The center has a total of 339 manuscripts and some uncounted number of documents. The first batch of 50 manuscripts belonging to 18th century or older was received from one Mr. Ravindra Dattatreya Dev, Raver taluka, Jalgaon on 13 Jan 2013. These manuscripts are primarily in Sanskrit and Marathi written in Devnagari, Modi scripts on primarily on religion and allied subjects. Six months later on 06 July 2013, 249 manuscripts were received from the Kolambi Mutt, Naaygaon, Nanded district. The collection ranged from religion, philosophy, yoga, ayurveda, mantra-shastra (spells), astrology, etc., in Marathi, Hindi and Sanskrit. There are some documents in Telugu, Urdu, Arabic and other languages. The scripts include Devanagari, Modi, Urdu, Telugu, Arabic.

S. No	Subject	No. of Mss	S.No	Subject	No of Mss
1.	Adhyatma	68	10.	Music	1
2.	Dharmic	129	11.	Puran	36
3.	Khel	1	12.	Sahitya	4
4.	Geeta	22	13.	Tattvadnyan	6
5.	Pooja Path Sthotra	25	14	Upanishad	4
6.	Itihasa incl. Mahabharata & Ramayana	14	15.	Vedant	1
7.	Jyotish	6	16.	Vyakaran	2
8.	Kavya	1	17.	Unknown	9
9.	Mantra Tantra	10	**Total**		339

Table 4.20: Subject wise MSS Collection in MJC

Cataloguing and Documentation: The cataloguing of the manuscripts is done with 17 column descriptors prepared by the center on its own. Efforts are on to prepare a more elaborate descriptive catalogue and publish it shortly.

Conservation: The center has entered into a Memorandum of Understanding with the Postgraduate and Research Institute, Pune (Deccan College) on 29th April 2019 for carrying out conservation activities on their heritage material. A temporary conservation laboratory was established at Deccan College and since June 2019 preventive and curative conservation of manuscripts is being carried out there by deploying trained personnel. The following table depicts the conservation activities conducted at MJ College and Deccan College till January 2021.

M.J College				**Deccan College**			
Preventive Conservation		**Curative Conservation**		**Preventive Conservation**		**Curative Conservation**	
No. of Bundles	No. of Folios	No. of Bundles	No. of Folios	No. of Bundles	No. of Folios	No. of Bundles	No. of Folios
339	11235	119	3312	53	4523	50	4276

Table 4.21: Preventive and Curative Conservation Carried out at MJC and DC

Public Awareness and Outreach: The Center conducted awareness campaigns for school going students of 8th, 9th and 10th standard run by the KCE Society about the importance of conserving the manuscripts. In September, 2019 a five day preventive conservation workshop was conducted with the financial assistance from the NMM for 25 participants.

4.2.10 Institute for Oriental Studies (Shiva Shakti), Thane (MRC):

The Institute for Oriental Study, established in 1980, is a voluntary organization registered under Societies Registration Act and Bombay (Maharashtra) Public Trusts Act. It is established for the promotion of Indian culture, history, study of manuscripts and Sanskrit language. The Institute attains these objectives through organization of periodic seminars, workshops, exhibitions and discussions.

Prachya Vidya Abhyas Samstha (aka Institute for Oriental Studies) has been functioning in Thane since 1984. For the last 33 years, the organization has carried out many activities through its library and the Museum. At present the library of the institute has 30,000 reference books and 3500 rare books and manuscripts. The oldest

manuscript is dated 1078 AD and is titled as Sarvānukramanika. Some important research journals and periodicals are regularly subscribed by the institute for the benefit of the researchers. The Museum Department of the Institute has a collection of many rare idols and artifacts collected from Thane and Konkan divisions. Many researchers and scholars come to this institute for reference material on Sanskrit, history, Oriental studies and other social sources. The Institute has also organized many exhibitions on various topics and themes. The organization's collection contains many rare manuscripts. One such unique collection is the Mahatmya literature that preserves mythology and religious beliefs. Some rare, handwritten and printed mahatmyas of some deities and places are in the collection of the organization. An exhibition of these manuscripts of Mahatmyas was held in February 2018 at the Institute.

Collection: The library possesses about 2,800 Sanskrit manuscripts and 45,000 volumes of printed books and 200 very rare books. The MRC at Institute of Oriental Studies was created in May 2005.

S.No.	**Subject**	**Handwritten Pothhya Total**		**Printed Pothhya Total**	
1.	Vedas - Samhita, Pade	43	44	14	16
2.	Brahman	15	16	7	7
3.	Aranyaka	17	17	1	1
4.	Sutras	59	66	4	4
5.	Sutrantargat Prayog	124	124	9	9
6.	Shikshadi Vedanga Chatushtaya	20	23	2	2
7.	Nighantu	9	9	-	-
8.	Nirukta	26	28	3	3
9.	Grammar	50	53	14	17
10.	Other related to Vedas	41	42	8	9
11.	Puranas / Mahatmya	62	78	160	164
12.	Upanishads	36	57	14	16
13.	Pooja / Katha/vrate	161	170	34	37
14.	Stotra / Kavach / Atharvashirsha	110	137	33	35
15.	Jyotish (Lilavati 1287/1365)	47	82	6	7

16.	Sanskar	65	49	15	16
17.	Sahasranama/Namavali/Saptashati	61	85		
18.	Shantikarma	50	65	1	1
19.	Philosophy	108	120	54	55
20.	Dharmashastra / Smriti	21	22	11	11
21.	Gita	42	51	18	20
22.	Nataka / Kavya	23	27	18	19
23.	Kosha	37	41	17	17
24.	Shraddha / Ashocha Nirnaya	58	79	5	5
25.	Prayaschitta	13	14	2	2
26.	Vaidyaka	3	3	1	1
27.	Tantra	20	21	-	-
28.	Motley collection	190	225	44	47
29.	Saint literature (Ra Chi. Dhere collection)				
30.		1521	1774	507	

Table 4.22: Subject wise list of handwritten and printed *pothhaya*

Documentation: The Institute has documented 2,800 manuscripts of its collection in the prescribed data form of the Mission.

S.No.	Catalogue
1.	Descriptive catalogue of the Sansankrit Manuscripts in the Tanjore Maharaj Serfoji's Saraswati Mahal Library Tanjore by P.P.S Shastri, Vol.1, Vedas 1928, Vol.3, Vedas and Vedangas 1929, Vol.4, Vedangas and Kalpa Srauta 1929, Vol.5, Kalpa Srauta 1929, Vol.6, Kavya's 1929, Vol.7, Kavya's 1930, Vol.9, Kosha, chandas and Mankara 1930, Vol.13, Uttar Mimanisa (advaaita),NO.7413-7772,1932, Vol.15,Mahabharta,Gita,Ramayana,Sivarahasya,Mahapuranas,upapuranas No.8245- 10649,1932, Vol.16,Natya,sangit,kamshastra,vidya and Jyotish No.10650-11737,1984, Vol.17,Grhyasutiras,Bhasyas and prayogas No.11738-14179,1932, Vol.18, Vrata, Agama and Tantra No.14180-15467,1932, Vol.19,General Introduction To Vol.1-19 Mantras No.15468-17748, Stotra and Suppliment No.19093-24432, Indices To Vol.1 To 19,1934, Vol.20,Mantra shashtra ,1952, Vol.21, Part 1 Stostra ,1975.
2.	Descriptive Catalogue of the Marathi Manuscripts and Books Tanjore Maharaj

	Sarfoji's Saraswati Mahal Library Tanjore by Ramdasi Ramchandra Bhagyaswami Goswami Vol.1 Varges 123, Vedanta, Purana, Ramayan 1929, Vol.2 Varges 4-17 Bharta (4), Prakiran, Vol.3 Varga, 18th Vahyas, 1938, Vol.8 18th Vahyas 1938.
3.	– do – By Sri.G.Nagaraja Rao A.D.1963, Vol.4
4.	Tanjore Maharaj Sarfoji's Saraswati Marathi Granthanchi Bayazvar Yadinchi Anubandh Vargha 1 Vedant No.2259-2303.
5.	A Descriptive Catalogue of The Talugu Manuscripts in the Tanjore Maharaja Sarfoji's saraswati Mahal Library Tanjore, Vol.2.
6.	A Descriptive Catalogue of Sanskrit Manuscripts acquired and deposited in government Sanskrit college library, Saraswati Bhavan Banaras. 1791-1950. Vol.1, Part.1 and 2, Vedic Manuscripts. Vol.2, Part 1 and 2 Karmakanda Manuscripts, Vol.3 Dharmashashtra. Vol.4, Purana-Itihasa and Gita MSS 1957 Vol.5, Part.1,Shotra Mss, Vol.6, Tantra Mss.1960, Vol.7 Purvottav-Mimamsa and Sāmkhya Yoga 1961, Vol.8 Nyaya-Vaisesika Mss.1962, Vol.10, 1964, Vyakarana Mss, Vol.11, 1964, Sahitya Mss.,
7.	Descriptive Catalogue of Sanskrit Manuscripts of Orissa In the Collection of the Orissa State Museum Bhubaneswar by Sir Kedarnath Mahapatra, Vol.1, Smrti Manuscripts 1958, Vol.3, Purana Manuscripts, Vol.4, Jyotisha and Ganita Manuscripts 1963, Vol.5, Tantra Manuscript,
8.	Descriptive Catalogue of Manuscripts In the Government Manuscripts Library Deposited at the BORI, Serial No.29, Vedangas 1990, Vol.3, Part.1 and 2, Serial No.31, Vedangas Vol.3, Part.3,1991, Serial No.33 Vol.4, Part.1, 1993, Kalpasutras.
9.	Descriptive Catalogue of Sanskrit Manuscripts Vol.1, Veda and Vedic, Edited by T.N. Dharmadhikari Vaidika Samsodhana Mandala, Poona,1974, Vol.2, srauta Prayogas 1978, Vol.3, Upadhye Collection, 1985.
10.	An Alphabetical Catalogue of Sanskrit Manuscript Part.1 and 2, Edited by Sir Nilamani Mishra, In the Collection Of the Orrisa State Musuem Bhubaneswar,
11.	A Descriptive Catalogue of Sanskrit Manuscripts at shri Vidyadhisha Sanskrit Manuscripts Library Dharwar, Vol.1, 1963
12.	Catalogue of Sanskrit Manuscripts in the Deccan College Postgraduate and Research Institute, Poona, Vol.3, Dharmasastra, 1966.
13.	Catalogue of Old Manuscripts in Sanskrit in the Collection of the Sanatan Dharma sabha ahmednagar.
14.	A Descriptive Catalogue of the Manuscripts in the Moropant Collection in the Library of the University of Bombay Vol.1, Bombay University Library Bombay 1981.
15.	A Suplimentary Catalogue of the Sanskrit Pali ani Pakrit Book in the Library of British Museum 1906-1928 London.
16.	Catalogue of the Sanskrit and Prakrit Manuscript in the Library of the Indian office Vol.2, Brahmanical and Jain Manuscript by author Berriedate Keith with a supplement Buddhist Manuscript By F.W. Thomas Part 2, No.628 to 8220
17.	A Descriptive Catalogue of Sanskrit and Prakrit Manuscript the Asiatic Society of Bombay 1998.
18.	Catalogue of Jyotisa Manuscript in The Wellcome Library.

19.	Granth Parijat A classified Catalogue Of Hindi Manuscripts in Shree Sanjay Sharma Museum & Research Institute.
20.	Shri Bhuvaneshwari Pith Gandal Saurashtra (India) Catalogue & Index Of Manuscripts.
21.	Catalogue Of Manuscripts In The Maharaja Sawai Mansingh II Museum Jaipur.

Table 4.23: List of Descriptive Catalogues of Manuscripts in Sanskrit and Marathi

Budget & Finanacials: The Institute does not receive any government grants and entirely relies on individual donations for its activities. The Institute has been developing and enriching its library mainly by acquiring books by philanthropic donations. However, since many of the books relating to Indology and Sanksrit studies are getting out of print, the Institute is trying to obtain noteworthy titles on Indian and Sanskrit Studies, published of late, by some Western Universities. Efforts are on to computerize the library so that the book catalogue is made available online. However, due to paucity of funds the Institute is not able even to subscribe to journals published within and outside India related to Indology and allied subjects. The Institute promotes the idea called Friend of the Institute where a minimum donation of Rs. 5000 would entail a donor to become a patron of the Institute.

Publications: The Institute published some of the very outstanding titles such as *Sanskrit outside India, Historical Truths and Untruths Exposed, Agriculturei in Ancient India, British Policies and Indian Culture, Riddles of Buddha and Ambedkar, Education in Ancient India, Tajmahal, Jati, Varna and Genetics, Tajmahal & The Great British Conspiracy*. Two books titled The Temple-Tower, Prasada Mandana English translation with copious notes are under publication.

Timings: The Library is open from 11 AM to 4:30PM, Monday to Saturday.

Future Plans: The Institute is making efforts to establish a research library and museum at Thane.

4.2.11 Barr. Balasaheb Khardekar Knowledge Resource Center (BBKKRC), Shivaji University, Kolhapur (MRC & MPC):

The Shivaji University of Kolhapur was established in 1962.The library became functional in 1964 and was later named Barristor Balasaheb Khardekar Knowledge Resource Center in 1981. The BBKKRC set up an Archival Cell in 1988 to preserve rare books, historical documents, manuscripts and the University records. The library, apart from users from the university is open to other academic users of other

universities and institutes for reference. A reference charges is laid on visitors for using the library resources. The Manuscript Resource Center (MRC) of BBKKRC is approved by National Mission for Manuscript (NMM) in 2012.

Infrastructure: Total Area of the Barr. Balasaheb Khardekar Knowledge Resource Center is 10,601.45 sqm, including new Knowledge Resource Center building. The first floor of the old library building consists of the Archival Section where special collections received through donations are kept. Shri S. M. Desai Conservationist is the in charge of the Archival Section. It also has scanner room, stack section, Manuscript Resource Center and Departmental Laboratory. New Knowledge Resource Center Building has reading hall at the ground floor, the first floor has reading hall for female student and Abalal Raheman Art Gallery.

Facilities: Wi-fi facility, Internet Hall with all required facilities, Rare Books & Manuscripts Collection in Archives Section, three Reading Halls with a seating capacity for a total 1200 users. The KRC offers several facilities and services such as photocopying, internet, scanning, downloading/printing and document delivery service. The KRC campus is under CCTV surveillance system. Other facilities include R.O water and sanitary facility, beautification and gardening around the library building, lift and ramps, etc.

Staff: The BBKKRC has the following Professional Staff:

S.No.	**Designation**	**No. of Staff**
1.	Director	1
2.	Deputy Librarian	2
3.	Assistant Librarian	1
4.	Senior Library Assistant	7
5.	Conservationist	1

Table 4.24: Professional Staff at BBKKRC

- **BBKKRC Administrative Staff:**

S.No.	Designation	No. of Staff
1.	Assistant Superintendent	1
2.	Senior Assistant	1
3.	Junior Assistant	1
4.	Library Attendants	6
5.	Peons	2

Table 4.25: Administrative Staff at BBKKRC

Working Hours: Reading Hall (Main Library & Study Center Library) is kep open on all days from 6.00 a.m. to 12.00 Midnight. Whereas the Archival Section is kept open on all working days including Saturdays from10.20 a.m to 6.00 p.m.

Archival Collections: Trupti More reported in her thesis that the University created an independent Archival Cell in the year 1988 consisting of 5675 rare manuscripts and that it has a total of 6,500 manuscripts in its possession (More, 2015, p. 160). Archival Cell of the library is unique in Maharashtra consisting of about 50,000 rare books dating from 1716 A.D. to 1950 A.D., donated by various eminent scholars and personalities. Upto 31st Aug 2014 the Archival unit contained 6923 Manuscripts**.** However due to the efforts of the university and donations by individual donors, there has been increase in the manuscript number at the archival cell. At present about 9163 Manuscripts are available in the Archival Cell on various subjects such as Vedanta, Dharmashastra, Nyayashastra, Jotishya, Vaidak, History, Puran, Literature, Kavya, Natak (Drama), Yoga etc. The oldest manuscript dates back to 1353AD. 'Grahashanti Paddhati' is a Paper Scroll which is 32*4 long. Ganesh Mahatmya is an illustrated manuscript belonging to Saka1713 (1791AD). Other unique manuscript collections include Ayurveda soukhya paribhashay, Ayurvedasoukhya Nidan Chikitsa authored by Raja Todarmal in Saka 1741, Shilapress manuscript of 'Rukmini Svayamvar' belonging to Saka 1783 and Dnyaneshwari written in Saka 1490/A.D 1568. A Tamrapata (Copper plate) of 516 A.D.namely 'PandurangpalliTamrapta' and numesmatics belonging to Shivaji era, old States' and British era are worth mentioning. Stone objects from Bramhapuri (Kolhapur) excavation, facsimile copy of 'Constitution of India' etc. are also available in the Archival cell. Besides the rare books and manuscripts more than 50 special collections and different archival material are also available in the cell. Old Newspapers like Din Bandhu, Bombay (1893-1912), Rashtraveer, Belgaum (1920-1947), rare periodicals like Harijan, Hunter, Akhand Bharat (Kolhapur), Vijayi Maratha, Kolhapur (1919-1932), Din Mitra, Taravadi etc. are available in the cell. The oldest manuscript of 'Dnaneshwari' (Shaka 1460) is available in the Archival Cell.

Donations: The manuscripts were acquired mainly from the individuals and institutions. Some of the important collections of manuscripts are Shri. V. N. Panditrao, Kolhapur, Ingale-Kulkarni Collection, Rajvaidya Jagtap Collection, Nirnaya Sagar Press, Mumbai Collection, Principal B.A. Babar, Tasgaon, Pandit

Balacharya Khuperkar Shastri, Kolhapur, and Shri. B.S. Pradhan, Kolhapur, Shrimant Ganapatrao Rajopadhye, Kolhapur.

Cataloguing and Documentation: A Descriptive Catalogue of Manuscripts, prepared by the well known Sanskrit Scholar Late Shri Balacharya Khuperkar Shastri, is published with financial assistance from Government of India in 1996 (More, 2015, p. 160). Digitization of Manuscripts is planned in the near future.

Manuscript Resource Center (MRC): National mission for Manuscripts (NMM), sanctioned MRC to the University in the year 2012 to survey, document and network with private and institutional custodians of Manuscripts work of manuscript in the specified region of Shivaji University. The first project period was 2012-2017 during which period a total grant of Rs. 15 lakhs is received and 1200 manuscripts are documented and reported to NMM. It is now extended up to 2021. As per the NMM Annual Report 2017-18, so far BBKKRC has uploaded data of 16890 MSS.

Conservation: This Cell follows certain activities for preservation of special materials. Preservation of rare materials is made at fumigation chamber by recycling of chemicals. Special fumigation chamber to preserve rare documents by approved chemical methods is used; hand lamination with imported Japanese tissue paper for very rare and important documents is done, also special stacking, shelving and display facility for all rare documents.

Publication: Under the Shivaji University's Sanksrit and Prakrut Series, 'Rasaratna Samucchaya' in two volumes was published in 1970. Under the Shivaji University History Series, a collection of Persian letters was published under the title 'Tarabai Papers'. A book titled 'Jijabai Kalin Kagadpatre' was published In 1992 Dnyaneshwari was published. Rajarshi Shahu Chhatrapati Papers were published by the university and reprinted in 2002. Another book titled 'Karmaveer' was published in the memory of Karmaveer Bhaurao Patil.

4.2.12 Kavikulguru Kalidas Sanskrit University, Ramtek: MRC

The Kavikulguru Kalidas Sanskrit University is unique in academic nature from all the other Sanskrit Universities in India. Established in 1997, it is a leading Sanskrit university among the 9 Sanskrit universities in India. It has 50 affiliated institutions in the Maharashtra State, and 30 outside Maharashtra from Gujarat to West Bengal, and

from Kerala to Haryana. The Kavikulguru Kalidas Sanskrit University became a MRC of the Mission in November 2004.

Collection: The MRC of KKSU has about 3000 manuscripts, of which 2288 manuscripts are catalogued. Among the collection, 2520 manuscripts are complete and 480 manuscripts are incomplete. The completeness or otherwise of remaining manuscripts is not documented. The oldest manuscript is a photocopy of Tattvachintamani vyakhya of Vachaspati Misra dating to Saka 1400, and the original handwritten manuscript of Saptashati is dated Saka 1646. There are 401 manuscripts belonging to 1300 A.D, 300 between 1301A.D-1600 A.D, 245 between 1601.A.D-1900 A.D, about 2000 manuscripts belonging to the period between 190l A.D-1947A.D. Number of manuscripts of which the dates are not known is 54.

Sthotra	Dharma Shastra	Vedānta	Mantra tantra	Puran	Ayurveda	Astrology
281	194	74	47	170	27	82
Vaidik	Darshan	Upanishad	Puja	Kavya	Ved	Marathi Pothi
110	21	26	47	152	25	22
Sahitya Shastra	Tantra	Gujarati Pothi	Itihas	Champu Kavya		
8	4	2	2	5		

Table 4.26: Subject wise Classification of MSS Collection at KKSU

All the manuscripts possessed by the center are paper manuscripts only. There are 11 illustrated/illuminated manuscripts, 2589 printed, and block printed are 400 in number. Of the 3000 manuscripts 2900 are in Sanskrit 22 in Marathi, 2 are in Gujarati. 2990 manuscripts are written in Devanagari script. The university has a collection development policy formulated by a constituted committee. The collection development is done by purchase, by donation, transferred from old collection, exchange, and even through requesting the donors and requesting temples and pujaris. However there is no conservation laboratory established in the university.

Survey and Documentation: The MRC has documented 6,143 data of manuscripts covering Vidarbha and Marathwada region of Maharashtra. Mostly the manuscripts cover on Vrata, Vedic literature, Purana and other Shastras. The latest NMM Annual Report 2017-18 reports that KKSU has uploaded data of 4528 MSS.

Facilities: The center has photocopier, scanner, adequate storage furniture, bindery, etc.

Cataloguing: The MRC of the University has catalogued all the manuscripts. Printed, card and computerized catalogues are prepared. The accession register consists of the following eight columns: Accession number, Title, form (handwritten/photocopy/ printed), Author/Scribe, Completeness, No. of Folio, Period and Subject.

Conservation: Basic preventive conservation is carried out in the center with the help of dry brushing, small hand-held vacuum cleaner, soft cotton cloth, and flat soft brush.

Digitization: The digitization of the entire collection is carried out by NMM and the digitized data is stored in 16TB storage. Digital content is managed using DSpace.

Usage: Even though accommodation facilities are available for foreign visitors, the manuscripts are rarely used by the users. Closed access is practiced. The visitor numbers in the last five years amply demonstrate the lack of interest on the part of the users. 2014-15 = 5, 2015-16=3, 2016-17 =2, 2017-18 =2, 2018-19=1, 2019-20=1. The prime reasons cited by the center are lack of knowledge of language of manuscripts, inability to understand script, inadequate knowledge of staff regarding collection. Only part of the collection is ever used.

Awareness Campaigns: The center has organized awareness camps by conducting seminars, by providing information on website, exhibition, and bulletins/newsletters.

4.2.13 Vedashastra Vidyasamvardhan Mandal, Karad, Satara, (MRC and MCPC): (*About Us*, n.d.-a)

Karad has been a place of pilgrimage known as 'Garud Tirtha' town since Mahabharat period. It has been a center of learning with many Ved Pathshalas and religious centers imparting religious studies. There are mentions in ancient texts regarding the educational facilities in Karad to study grammar, Vedas, Vedanta and other ancient Sanskrit literature. These schools were known as 'Pothishalas' where the old religious literature was copied down by persons with good calligraphy. With the passage of time, this tradition was discontinued. Sixty years ago, even in prevailing adverse conditions of that time, Shri. Sonopant Umarani started a school to teach Vedas which he ran till his death. After his demise, some Sanskrit loving citizens came together and decided to reinstate the school to guard the Indian traditions and

keep the oral recitation of Vedas, which an invaluable wealth for the whole humanity, as accepted even by the UNESCO. It was also decided to protect the ancient manuscripts and the out of print scriptures through proper means. It was also decided to collect manuscripts and the scriptures from places whenever they are available and made available to those who want to refer and study them. With these thoughts in mind, an Executive body was formed and it started its work immediately. The members of the Executive body contributed the funds to purchase a plot for the library and an institution named 'Ved Shastra Vidya Samvardhan Mandal, Karad, was established on 11th November 1999 and the 'Ved Phathshala' affiliated to this institute was started on 11th June 2000.

Donations: The Mandal has been able to gather Rs. 65 lakhs as donation from various individual donors, with the help of which it was able to erect a building of its own. Though the building is relatively new, it still requires repair of ceiling and walls. On an average it receives an annual donation of Rs. 4.5 lakhs for running the center.

The Mandal has a reading hall able to accommodate 30 people.

The Collection: The Mandal has about 8000 manuscripts and 1000 rare books in its possession. A rare book titled Satara Swatantra Sainik is in its pride possession. The oldest manuscript is about 150 years old titled 'Sapta Sruti'. Another manuscript on Tantra Shastra is also among the oldest manuscripts of the Mandal. The Mandal has in its possession the 18 chapters of Bhagavadgita printed on Lithopress. Of the 8000 manuscripts about 25% of the manuscripts are incomplete. The Mandal has Sanskrit, Marathi and even English manuscripts in Devanagari, Modi and Roman scripts. It has showcased 4 Yagnya kunds and yagnya samagri.

Staff: The collection is managed by two library staff who underwent training in BORI and University of Pune.

Conservation: For the conservation of manuscripts traditional methods such as keeping tobacco leaves in the storage racks and keeping the manuscripts between wooden planks and wrapping the manuscripts in red cloths.

Digitization: All the manuscripts of the Mandal are digitized in the year 2017

Publication: The Mandal has published a book titled Manojeet Pushpam.

4.3 Manuscript Conservation Partner Centers (MCPC-s)

In order to facilitate and provide assistance to institutions with large holdings of manuscripts, the Mission nominates such institutions as Manuscript Conservation Partner Centers (MCPCs). These institutions are provided conservation assistance through the MCCs. Under this programme, each MCC nominates 10 institutions as MCPCs. The MCPCs are provided with advice on storage and maintenance of their collections in a scientific manner. The Mission also provides conservation and storage material (acid–free board, acid–free paper, etc) for storage of important manuscripts in these collections. Preventive and curative work on the manuscripts where required is also undertaken by MCCs. At present, more than 200 institutions are associated with the Mission as MCPCs.

List of MCPCs:

- Bhandarkar Oriental Research Institute, Deccan Gymkhana,Pune-411 037
- Rajwade Samshodhan Madal, Dhule.
- Anandsshram Samstha, Pune.
- Samartha Vagdevata Mandir, Dhule
- Fergusson College, Pune
- Forbes Gujarati Sabha, Mumbai
- Vedashastravidya Samvardhan Mandal, Karad, Distt. Satara,
- Prajna Pathshala, Wai, Distt. Satara

This evaluative study will help the researcher in establishing a manuscript conservation and digitization center in his college library by partnering with NMM and effectively work toward cultural preservation of heritage manuscripts of India.

4.4 Other Important Manuscript Custodian Centers in Maharashtra:

The research made extensive survey of manuscript custodian centers in Maharashtra apart from those recognized by the NMM as MRC, MCC or MCPC. The study revealed that a large number of institutions are known for their manuscript collections but they are not under the NMM's list. A brief overview of these custodian centers is provided herewith. The centers appear here in accordance with the alphabetical listing of their names.

4.4.1. Ananthacharya Indological Research Institute (*Library*, n.d.-a)

Prativadibhayankara Jagadguru Ananthacharya Swami of Kanchi, who lived between 1874 A.D. and 1936 A.D had built up a huge personal collection of books and manuscripts on Vaishnava Sampradayas, different branches of Indian Philosophy and Hindu Culture. He called his library Hayavadana –lila-sadanam. This collection is now housed at Ananthacharya Indological Research Institute.

The Collection: The Institute has in its possession a precious collection of 800 palm-leaf manuscripts on different topics in the languages of Sanskrit, Tamil and Manipravala, represented in Grantha, Telugu, Tamil and Devanagari Scripts.The topics covered by the manuscripts include Vedic Samhitas, Epics, Upanishads, Vedanta, Dharmasastra, Samskaras, Kavya, Kosha, Poetics, Stotras, Mantras Jyotisha, Ganita and aspects of Ancient Indian Medicine. The Institute's library is also a rich repository of rare and hard to be found historically and culturally significant printed books consisting of 16,150 printed volumes. These treatises cover a wide array of subjects such as Sanskrit Literature & Grammar, different streams of Philosophy, Vedas, Upanishads, Sutra Texts, Puranas, Valmiki Ramayana and various later Ramayanas, Mahabharata, Bhagavadgeeta, Dharmashastra texts, Stotras, texts belonging to Classical Sanskrit era, books related to Ancient Indian Religion, Culture, Archaeology & History including its multiple facets such as Science, Art, Architecture, Sculpture, Painting, Dance, Jyotish, Tantra Shastra, Iconography and Epigraphy etc. These books are in multiple languages such as Sanskrit, English, Hindi, Marathi, Tamil and Telugu.

Cataloguing: All the manuscripts are catalogued and listed. A descriptive catalogue has been recently prepared. The Institute is making preparations to publish with analytical notes some of the select manuscripts after duly translating them.

Preservation: The manuscripts are preserved with the periodical application of lemon grass oil, and fumigation.

4.4.2. Anjuman-i Islam Urdu Research Institute

Anjuman-I- Islam Urdu Research Institute was established in 1948. The Karimi Library has 130 paper manuscripts in Arabic, Persian and Urdu languages covering subject areas like History, Poetry, Science and Islamic studies etc.

4.4.3. Asiatic Society of Mumbai (*Manuscripts*, n.d.) (*About Us*, n.d.-b)

The Asiatic Society of Mumbai forms part of the network of institutions created by the British to generate, systematize and disseminate knowledge of India and Orient in diverse areas like numismatics, epigraphy, anthropology, history, archaeology, linguistics, philology, natural history, geology, philosophy, literature and theology.

The Collection: The Society's holdings include over 3,000 manuscripts in Sanskrit, Arabic, Persian, Urdu and Prakrit from all over India and Nepal mostly on paper. However the Society also has some palm leaf manuscripts. The range of topics is varied, including technical literature on linguistics, medicine, astronomy, brahmanical literature in Sanskrit, an appendix on Buddhist manuscripts, Jaina literature and manuscripts in Gujarati, Hindi and Marathi. Some of the manuscripts are distinguished for their fine calligraphy and paintings. There is the 16th century Sanskrit manuscript Aranyaka Parvan of the Mahabharata, with its rich illustrations rated as a crucial discovery for the study of pre-Mughal miniature painting. The latest addition to the manuscript collection of Asiatic Society of Mumbia is the entire work of Pu La Deshpande donated by him.

The Society's library is a treasure trove of books and periodicals, ancient manuscripts, painted folios, coins, artefacts, maps and prints. One of the pride possessions of the Society includes the original Italian manuscript of Dante's Divine Comedy. The Sopara relics, contain among other artefacts, what are believed to be fragments from the Buddha's begging bowl. Bharat Ratna Mahamahopadhyay Dr.P.V.Kane's literary output for fifty long years that produced his monumental, much acclaimed, multi volume History of Dharmasastra is also in the Society's Library.

Some rare manuscripts in the Library

- Aranyakaparvan of Mahabharata, (illustrated Sanskrit) 16th century
- Divina Comedia by Dante Alighieri (Italian) 1350 AD
- Gautampricchasutra (Prakrit) with Sanskrit vritti of Sritilaka 1350 AD
- Ganaratnamahodadhi of Vardhaman (Grammar, Sanskrit) Samvat 1423
- Kalpasutra of Bhadrabahu (illustrated, Sanskrit) Jain MS 15th century AD
- Mahabharat by Faizi (Prose translation) (Persian) 18th century copy
- Prajnaparamita astasahasrika (illustrated, Sanskrit) Buddhist MS from Nepal
- Risalat at,tarjamat az-zahira li firqati Bohrat al-bahira An essay on the History of the Bohras (Arabic) 17th century AD

- Sadavasyaka sutra with Balavabodha (Old Gujerati) 1393 AD
- Shahnama of Firdausi (Persian) copied in 1843 AD
- Suryasiddhanta with bhashya of Candelvara (Astronomy, Sanskrit) 12th century AD
- Vasupujyacharita Life of the Jain Tirthankara Vasupujya (Sanskrit) 1242 AD

Digitization: ("Asiatic Society Library Goes Digital with 10,000 Books, 2,000 Manuscripts," 2018) The website, makes available nearly 2,000 manuscripts and 10,000 books from the collection that includes an almost complete collection of the Bombay Chronicle (1913-1959), and select volumes from 19th century Bombay newspapers, the Bombay Courier and the Bombay Gazette. Government publications and reports from the nineteenth century can also be accessed on the Society's portal. The project took off in 2015 after the government sanctioned Rs 5 crore for digitisation of the books. The resources are available at an annual membership fee of Rs 2,400. Discounts are available for society members.

4.4.4. Bharatiya Itihas Sanshodhak Mandal: ("Bharat Itihas Sanshodhak Mandal," 2020)

Located at Sardar Mehendale's palace at Appa Balwant Chowk in Pune, this institute was established on 7 July 1910 by the veteran Indian historian Vishwanath Kashinath Rajwade and Sardar Khanderao Chintaman Mehendale to provide ready resources and training for historical researchers, save their time and motivate them towards research of actual Indian history. Rajwade's disciples Datto Vaman Potdar, Ganesh Hari Khare and Vasudeo Sitaram Bendrey played key roles in making the *Mandal* and its activities prosper. Since its inception, the *Mandal* has been receiving donations and bequests of books and papers from people and scholars.

Resources: Presently, the *Mandal* maintains more than 15,00,000 historical papers and 30,000 manuscripts mainly in Marathi, Modi, Persian, Portuguese and English. The *Mandal*'s library has more than 30,000 books mainly in Marathi, Modi, Persian, Portuguese and English langauge, which are made available to the researchers for free in campus consultation or carry home for a nominal fee. These resources hold sizeable volumes on the history of the Maratha Empire, Maratha culture and Marathi literature. There are also a large collection of the resources on British and Mughal Rule over India. The *Mandal* issues a Quarterly Journal called 'Trai-Masik' wherein essays and articles on new historical and archaeological discoveries are published. It has also

published books written and edited by veteran historians and reports of annual conferences and historians' meets. The museum of the Mandal has also preserved over 4,000 coins, 1,000 paintings and a few sculptures and inscriptions. The *Mandal* periodically organises lectures, workshops, training, seminars and study tours for the young researchers and historians.

Funding: A newspaper report in 2004 (Damle & Pate, 2004) pointed that the *Mandal* finds it difficult to micro-film or digitise its collection due to paucity of funds. In 2009, as it entered its 100th year, it planned to create a permanent fund of Ten Million Rupees and use the interest from this fund to pay its expenses.

4.4.5. Bhausaheb Vartak Granthalaya, Gokhale Education Society's H.P.T Arts and R.Y.K Science College

H.P.T. Arts College was established in 1924 under the aegis of Gokhale Education Society.

The Collection: The Bhausaheb Vartak Granthalaya College has 3,628 Sanskrit manuscripts at its possession.

Organization: The collection is duly classified and, catalogued and microfilmed, also available for reference in the Library.

4.4.6. Central Library, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Marathwada University was inaugurated on 23rd August 1958 and the functioning of the University library started in December 1959. In May 1966, Library shifted to its new building on University campus.

The Collection: The library has more than four thousand manuscripts. Majority of the manuscripts are on Mahanubhav Panthas and available in Sakal script. Apart from these, more than 200 manuscripts of 'Devi Strotas' are written by Raje Shamraj Rai Rajwant Bahadur, Hyderabad.

Digitization: The digitization of the collection is under way.

4.4.7 Chandmal Tarachand Bora Mahavidyalay, Shirur: (*LIBRARY COLLECTION*, n.d.)

The College library has a very good collection of rare books in Sanskrit, Marathi and English dating back to 1902. Some of the titles are *Plato*, *Sankshipt Mahabharat, Prachin Charitrakosh, Maharashtriya Dynankosh, Hindu Dharma Shikshan,* etc.

These rare books are maintained specially and binding of these books is done as and when required. Rare Collection of Annual Reports on Indian Epigraphy (1887-1998) published by Archaeological Survey of India titled *Epigraphia Indica* is available in the Library.

The library has plans to digitize these collections and put it on the library website so that the knowledge in these books can reach to all without any limitations of location and time.

The library also has an extensive collection of reference sources like Encyclopedia Britannica, Dictionaries, Biographies etc. Other than the old and new edition of Encyclopedia Britannica, the library also has Special Encyclopedia and Dictionaries like Itihas Shastra kosh, Manasshastra Kosh, Arthashastra Kosh, Aitihasik Shabdkosh, Sarita Kosh etc. Though the college is listed on the IGNCA website as a custodian of manuscripts, there is no mention of manuscripts in the library collection, on the college website.

4.4.8. Chhatrapati Shivaji Maharaj Vastu Sangrahalaya/ Princes of Wales Museum of Western India (*Research Library*, n.d.)

Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, formerly known as the Prince of Wales Museum, is one of the oldest reference libraries in the country. The Foundation Stone of Chhatrapati Shivaji Maharaj Vastu Sangrahalaya was laid by the Prince of Wales on 11th November 1905 and the Museum was named Prince of Wales Museum of Western India. This museum was established by the public contribution aided by the then Government of the Bombay Presidency. The building was completed in 1914 but it opened to the public much later on 10th January, 1922. The CSMVS Research Library is a primary source of information for curators, conservators, archaeologists, historians, artists, heritage conservationists and students. Scholars, post-graduate and research students visit the library regularly, for reference work, for writing their thesis and research articles. The Research Library was refurbished in 2013 with the help of funds the Kala Ghoda Association.

The Collection: The library has about 200 rare books and manuscripts. However access to these rare collections is given only with special permission. Its collection features palm leaf manuscripts dating to the 11th -12th century. Notable manuscripts housed in the museum include the Anwar-i-Suhaili painted in Mughalemperor

Akbar's studio and a 17th Century manuscript of the Hindu epic Ramayana from Mewar. Some of the rare books include:

1. The Hymns of the Sacred Law of the Atharva Veda by Griffith and Ralph
2. Jataka Volumes 4, 5, 6 by V. Fassball (1896)
3. Periplus of the Erythreen Sea by W. H. Schoff (1912)
4. The Seven Lamps of Architecture by John Ruskin (1891)
5. The Ain-I-Akbari, Volumes I & II by Abul Allami
6. Bombay Western Volumes I & II by James Douglas (1893)
7. Life And Teaching of john Ruskin by Mather J Marshall (1883)
8. The Sixth Great Oriental Monarchy by Rawlinson George (1873)
9. History of the Early Kings of Persia by David Shea (1832)
10. Ancient and Medieval India Volumes I & II by Mrs. Manning (1869)
11. India in Greece by E. Pococke (1852)
12. Essays On Indian Antiquities by Edwards Thomas, (1858)
13. Life Of Michel Angelo Volumes I & II by Herman Grimm (1877)
14. Artists and Arabs by Henry Blackburn (1878)
15. Wonders of Flora by John B. Seely (1824)
16. Selected Views in Mysore by Home (1794)

Digitization: The Research Library is currently engaged in digitisation of its collection.

4.4.9. Dasopant Sanshodhan Mandal

Dasopant Sanshodhan Mandal was established in 1986 with an aim to spread awareness and give publicity to the literary works of Marathi Poet-Saint Dasopant Digambar. It works towards the research, publication and preservation of manuscripts. The Mandal has more than 100 Sanskrit, Marathi and Prakrit manuscripts written by Dasopant Digambar in its possession.

4.4.10 Deccan College Post graduate and Research Institute

The Deccan College is the third oldest college in India. It has three manuscript repositories: the College library, the Maratha History Museum cum Archives and the Marathi Manuscript Center. In 1821, Mountstuart Elphinston, Governor of Bombay, established a Sanskrit Pathashala, called the 'Poona Sanskrit College'. In 1851 the Poona Sanskrit College was amalgamated with the English School and a new college called 'Poona College' came into existence. After the University of Bombay was set up in 1857, the Poona College was formally affiliated to it in 1860. In 1864, thanks to the munificence from Sir Jamsetjee Jeejeebhoy, of Rs. 1 lakh the present day college campus was constructed and in 1868 the college began to be called the Deccan College. The College was affiliated to Poona University in 1948. Since 1994 it is recognized as a Deemed University.

The Collection: The College has a huge library having rich and rare collection of both manuscripts and old books. It would have had much more significant collection of manuscripts in its possession had the original government collection of about 20,000 Sanskrit manuscripts not been transferred to the Bhandarkar Oriental Research Institute, when it was founded in 1917. For all practical terms, the collection that the College now has is acquired only after 1939 through donations from the individual donors and also due to the efforts of its first Director and Registrar.

Presently the College has over 11,140 paper and palm leaf manuscripts in Sanskrit, Marathi, Tamil, and Telugu languages. These manuscripts cover subject areas like Veda, Vedanta, Upanishad, Kavya, Dhrmashastra, Itihasa, Purana, Jyotisha, Nyaya, Vyakarana, Yoga, Ganita, Kosha, Nataka, Ayurveda, Mallashastra, Mimamsa, Subhashita, and Guhyasutra etc. There are also some illustrated and special types of manuscripts as well.

Cataloguing and Documentation: The College has brought out a descriptive catalogue of manuscripts in three volumes on Veda, Kavya, and Dhramashstra separately. Besides this a descriptive catalogue of Sanskrit manuscripts from Vinayak Mahadev Gorhe collection is also been brought out by the College. The total 469 microfilms of manuscripts are available in the collection. There are about 675 manuscripts which are yet to be accessioned as they are written in Dakhini Urdu, Persian, and Arabic paper manuscripts are also available in its collection, which are not accessioned yet owing to the indecipherability of the scripts by the library staff.

Digitization: The whole collection is digitized and put on intranet for access by the library. Under the British Library project titled 'Endangered Archives Programme', about 100 and 510 catalogued manuscripts at the library of the Deccan College Postgraduate and Research Institute in Pune have been microfilmed as well as digitial copies produced respectively under EAP023 and EAP248 programmes and deposited at the Marathi Manuscript Center.

4.4.10.1 Marathi Manuscript Center, Deccan College, Pune: Established in 5th August 2005 in the American Institute of Indian Studies in Deccan College campus, the Marathi Manuscript Center has a total number of 1,010 paper manuscripts. A majority of manuscripts are in Marathi while others are in Sanskrit written in Devanagari and Modi scripts.

Cataloguing and Documentation: An exhaustive union catalogue of Marathi Manuscripts is published by the Center in five volumes.

Digitization: The entire collection of manuscripts is microfilmed as well as digitized and uploaded on intranet for access within the campus. Under the British Library projects EAP023 and EAP248, several hundred manuscripts were microfilmed as well as digitized under the projects. The pilot project EAP023 succeeded in producing good microfilm and digital copies of 300 Marathi manuscripts. 36 reels of microfilm and 6 DVDs of digital copies have been collected by the British Library and another set of digital copies deposited in the Marathi Manuscript Center in Pune, India. Under EAP248, both digital and microfilm copies of 869 manuscripts (510 belonging to Deccan College and 359 of Prajna Pathashala) dating from the 13th to the 17th centuries were produced in 120 rolls of microfilm, and the digital copies (.tiff files and .pdf files) should fill 24 DVDs. One set of the digital copies and microfilms was taken by the British Library, and another digital copy was deposited in the Marathi Manuscript Center, Pune.

4.4.10.2 The Maratha History Museum-cum-Archives, Deccan College, Pune: The Maratha History Museum cum Archives is an invaluable repository of historical records of the late 18^{th} and early 19^{th} centuries. Rao Bahadur Parasnis of Satara, who was an ardent lover Maratha history, collected a good number of historical records from different parts of Maharashtra and other regions of India including some foreign countries. A museum was opended in Satara in 1925 with his personal collection which was later purchased by the Government of Bombay and was

named as Satara Historical Museum. Later in 1939, with the establishment of the Deccan College as a Post-Graduate and Research Institute, the entire historical documents and antiquities from the Satara Historical Museum were transferred to the College. The collection got a fillip in 1958, when a ruler of Maratha princely state at Jamkhindi in modern Karnataka state donated his private historical collection to the Maratha History Museum (More, 2015, p. 151).

The Collection: The Archival Section of the museum consists of 102 Rumals or cloth-bundles of old Marathi documents in Modi script, Macartney papers, manuscripts and palm leaf works in various languages, and a few copper-plates. The Modi Marathi documents from the old Satara Museum Collection are mainly from the Menavali Daftar of Nana Phadnavis, the Dhawadshi Record, the Gwalior State Daftar and Chhatrapatis record at Satara.

S.No.	Collection	Number
1.	Chhatrapatis of Satara	400
2.	Peshwas	1800
3.	Peshwa courtiers	12000
4.	The Nizam of Hyderabad	4000
5.	Tipu Sultan	120
6.	Janjira affairs	450
7.	The First Anglo-Maratha War	750
8.	Miscellaneous subjects like Brahmendra Swami of Dhavadshi, Ghashiram Kotwal, the Kotwali system of Pune, Shravan Mas Dakshina, Private accounts of Nana Phadnavis, affairs of the British, the French and the Portuguese, affairs of Chhatrapati Pratapsinha and other rajas of Satara, etc.	21000+
9.	Total	40,000

Table 4.27: Manuscript Collection at the Museum dating from 1750 A.D. to 1850 A.D

More than 30,000 family papers and documents of the 17th, 18th and 19th centuries were newly acquired and added to the Archival Section. They are:

S.No.	Collection Name
1.	Jagtap Papers
2.	Kanhere Manuscripts collection
3.	Nandurbar Desai Papers
4.	Nilanga Papers
5.	Nipani Desai Papers
6.	Newalkar-Rairikar Papers
7.	Shivapur Deshpande Daftar
8.	Sardar Bivalkar Daftar
9.	Sardar Patankar Daftar

Table 4.28: Private Papers and Collections Received in the Recent Past

The museum has over 200 original manuscripts in Marathi, Sanskrit, Arabic, Persian and English comprising of Marathi bakhars, Pothis, chronologies, Persian and Arabic translations of old Sanskrit works, astrological writings, diaries and poetic works.

There are seven palm leaf manuscripts out of which two are written in Nandinagari script, three in Malayalam and the rest two in Nagari. There are a couple of copper-plate grants belonging to Chalukya Vijayaditya (710 A.D.), Kadamb Ravivarman (6th century) and Rashtrakuta Dantidurga (1057 A.D.) (More, 2015).

Cataloguing: A descriptive hand list of the Arabic, Persian and Hindustani manuscripts belonging to the Satara-Historical Museum at present lodged at Deccan College has been published by the College.

4.4.11 Heras Institute of India History and Culture, St. Xavier College (*The Heras Institute*, n.d.)

Founded in 1926 as the Indian Historical Research Institute by Fr. Henry Heras S. J., the meseum of Heras Institute has a few miniature paintings, a profusely illustrated manuscript of Madhumalati depicting exquisite piece of the Kotah art on each page dated 1771 A.D. The institute's library also has some rare book and map collections. One of their treasures is the only known extant copy of the first book printed in Bombay the H. Becher's Remarks and Occurences, published in 1793.

4.4.12 Jayakar Library, Savitribai Phule Pune University

Jayakar Library is the central library of the University of Pune in India established in 1950, named after its first vice-chancellor, Dr M.R. Jayakar.

The Collection: The Jayakar library has a rich collection of very rare manuscripts, mostly written on paper, acquired from various parts of India. The library has a total number of 4439 Manuscripts. The subject matter of most of these manuscripts is religion, Ayurveda, Marathi Saint Literature, Mathematics and Jyotisha and contains titles of many unpublished works and 2,500 handwritten letters of eminent personalities. The University acquired these manuscripts either through donation or purchase from individuals and other small organizations. Special budgetary provision for the purchase of manuscripts has been since 1954. But what is the actual number of manuscript collection in the Jayakar Library? According to an article published in CALIBER in 2001 the library has a collection of about 5000 manuscripts, either

purchased or received as donations in the last five decade (Deshpande & Panage, 2001). Researcher Trupti More, gives the number of manuscripts as 4439, consisiting of 666 Marathi, 2376 Sanskrit, and 704 Hindi manuscripts (More, 2015, p. 148). In 2011 Londhe et al. gave contradictory numbers in respect of the number of manuscripts possessed by the Library in their very article (Londhe et al., 2011). In the introductory paragraph they give a figure of 4,057 manuscripts and in the table presented a few pages later, give the number as 6557.

S.No.	Language	Total No.	No. of Folios
1.	Marathi	673	88950
2.	Sanskrit	2377	133188
3.	Hindi	1007	29488
4.	Others (Letters)	2500	2500
5.	Total Number of Manuscripts	6557	261626

Table 4.29: Number of Manuscripts in Jayakar Library
(*Source:* (Londhe et al., 2011, p. 137)

Of the 666 Marathi manuscripts, three collections are eminent, namely Ketkar collection, around 52 unpublished manuscripts of Dattavarada Vitthala, a Marathi poet and contemporary of Peshwas Nanasaheb and Madhavrao and Mahanubhava collection.

Working Days/Hours: 6 days a week 10:30AM to 6 PM.

Reading room Facility: is available with 1000 seating capacity.

Cataloguing: Jayakar Library has published the descriptive catalogue of Sanskrit, Marathi and Hindi manuscripts in its collection. Shri S.G. Mahajan librarian had meticulously prepared the descriptive catalogue of the collection. The catalogue has eleven columns consisting of Sr. No. Acc. No, Title, Author, Commentator, Material, Script, Size in CMs, Folios, Lines per page, Letters per page, Extent, Condition and age, and Additional Particulars.

Digitization: Digitization of manuscripts was carried out in house a decade ago and the images are made available to scholars on intranet.

4.4.13 Juma Masjid of Bombay Trust Library

Juma Masjid Library known as kutub khana was opened in 1903. It has 1200 Arabic, Persian, and Urdu manuscripts. Built in 1775, it is home to a digitised library with

rare manuscripts from as early as the 1890s. A descriptive catalogue of these manuscripts is also published.

4.4.14 KR Cama Oriental Institute (Kanga & JamaspAsa, 1990)

The K R Cama Oriental Institute was established in 1916 through funds collected from the citizens of Bombay to perpetuate the memory of Mr. Kharshedji Rustomji Cama, the renowned oriental scholar, linguist, social reformer and educationist who passed away in 1909. The library collection is the result of several private collections, namely those of Mulla Firuz, Maneckji Limji Hataria, Sir Jivanji J. Modi, Sir Dorab Tata, Dastur Dr. Darab Sanjana, Jamshedji Unvala and Tehmurasp Anklesaria.

The Collection: The library now possesses about 20,000 books on Iranian religion, philosophy, history, geography, language, literature, art, and archeology and 1,828 manuscripts in Avestan, Middle Persian, Pazand, Persian, Arabic, Turkish, Gujerati, Urdu, Hindustani, and Punjabi, of which only a half have been classified. This library has one of the most important collections of Avestan Pahlavi and some old Persian manuscripts in the world. The following may be mentioned:

Manuscript details	No. of Folios	Dated
Vendidad Sade with Nirang Geldner's ms. Mulla Firoze Library	324	1721 or 1741
Yasna with Nirang in Geldner's Mulla Firoze library collection 1	145	1671
Yasna with Pahlavi translation in Geldner's Mulla Firoze library collection 4. This manuscript was not available to Geldner until after the Avestan text of his edition had been printed. It has now been published in facsimile edition: Manuscript D 90 Yasna, pts. 1-2, ed. K. M. JamaspAsa and M. Nawabi, Shiraz, 1976.	357	Undated
Geldner's yašt ms. in Framji Fardunji Madan library collection 1. This is the ancestor of most other yašt manuscripts.	277	1591
Dādestān ī dēnīg and other texts, Kermān		1572
Books 3-9 of the Dēnkard (DkB),		Copied in 1659 from a manuscript dated 1020.
Mādayān ī hazār dādistān and some other texts		Copied for the Mulla Firoze library in 1878
dīvān of Ḥāfeẓ and, Bīrūnī's al-Qānūn al-masʿūdī		1677

Table 4.30: Manuscript Collection and their Antiquity in KR Cama

Cataloguing and Documentation: The printed catalogues of Arabic, Hindustani, Persian, and Turkish manuscripts in the Library by E. Rehatsek was first published in 1873. Later a supplementary catalogue was added by S. A. Brelvi and B. N. Dhabhar in 1917. Catalogue of the Institute in three parts by B. N. Dhabhar was first published in 1923 followed by a printed author's catalogue of the Library in 1928.

Organization: The Institute's own system of classification was adopted for the first published catalogues of the Cama and Mulla Firoze libraries. At present, the college employs the DDC for subject wise classifying of its entire holdings and cataloguing through AACR-2. Efforts are on to recatalogue the collections.

Microfilming and Digitization: The rarest manuscripts were microfilmed in 1967-68.

Budget and Finance: The general funds of the Institute are used for the maintenance of the library. Occasionally donations are also received. There is a special 'M. L. Hataria Library Fund' for maintaining the donor's manuscripts.

4.4.15 Marathi Grantha Sangrahalaya of Marathi Sanshodhan Mandal

The Marathi Grantha Sangrahalaya founded Marathi Samshodhan Mandal on 1st February 1948 for undertaking research related to Marathi language and literature.

The Collection: The Mandal has 475 paper manuscripts in Marathi, the personal collection of Prof. A.K. Priyolkar, former Director of the Mandal. These have been collected from the British Museum and India Office Library, School of Oriental and African studies, London; Bibliotheca Nationale, Lisbon and from other Libraries at Lisbon and Prague, National Library, Calcutta, the Central Library, Panjim (Goa) and Miscellaneous microfilms.

Cataloguing: The Marthi Sanshodhan Mandal acquired rare books and microfilms and prepared a 'Catalogus Catalogorum' of Marathi manuscripts. A catalogue of microfilms of manuscripts in the Marathi Sanshodhan Mandal, was published in 1978. The Mandal has also published a descriptive catalogue of manuscripts.

Microfilming: There are a total of 58 microfilms, covering manuscripts from various libraries. The microfilms contain literature of prominent writers like-Bhartrhari (650 A.D.), Dnyanadeo (1275-1296 A.D.), Vishnudasanama, Namadeo (1270-1350 A.D.), Janabai (— 1350 A.O.), Tukaram (1608-1650 A.D.) etc. Some literature is related to

Shivaji Maharaj (1630-1680 A.D.), Afzal Khan, Narayanrao Peslme (1755-1773 A.D.) etc. The microfilms also cover literature of various Shahirs, Father Stephens, Padri Kawa, Padri Almaid, Jagannath Shastri, Balshastri Ghagve, Gangadhar Shastri Phadke, Dr. William Caire, Mahatnia Jyotirao Phule etc.

4.4.16 Munshi Saraswati Granthagar, Bharatiya Vidya Bhavan, (*Munshi Saraswati Mandir Granthagar*, n.d.)

The Munshi Saraswati library has a strong Indology and general collection built since 1970s. According to their website, it has over 70,000 books, 1400 manuscripts, paintings, coins and over 200 periodical subscriptions.

Cataloguing and Documentation: In 1984 The Granthagar began creating a Descriptive Catalogue of Manuscripts.The Bhavan has taken up the preparation and publication of a Descriptive Catalogue of rare Manuscripts (1500) in the Central Home Library in Bombay. For this project, the Government of India has extended 75% financial assistance.

The library conducts occasional workshops on manuscriptology and conservation to familiarize the students and library professional with the basic techniques.

Conservation: The library uses traditional and modern methods of conservation with the usage of Neem and tobacco leaves, camphor, turmeric, smoke of herbal Dhupa and other substances. Fumigation chamber is also put to use for disinfecting the manuscripts.

4.4.17. Peshve Museum, Parvati, Pune

The Peshwa Museum in Parvati is dedicated to documenting the intricate history of the Peshwa rule. Once a part of the palace built on the temple site by Shrimant Peshwa, it is now a museum that houses the various artifacts manufactured and used during the Peshwa rule. Wide variety of artifacts are on display such as, the coins, religious manuscripts, street lampposts, palanquin's used by royalty, the riding attire of the common horsemen,the grand attire worn by the kings, etc.

4.4.18 P.V. Narasimharao Granthalaya Bhavan, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Rashtrasant Tukadoji Maharaj Nagpur University library was started along with the establishment of the University in 1923. The University main library is on North Amabazari Road, Nagpur and there is a Campus Library on the Amravati Road. The Campus Library is a branch of the University library. This building was inaugurated

on 5th December 1978. The new name given to the building of Campus Library is P.V. Narasimharao Granthalaya Bhavan on 6th July 2010. A manuscript section of University Library was transferred to this Campus Library. Presently 14,313 manuscripts are available in its collection.

4.4.19 Rajapur Sanskrit Pathshalottak Nidhi, Ratnagiri

Shri Sanskrit Pathshalottejak Nidhi, Rajapur, was established in 1889 to impart teaching in Vedas and Shastras and to conduct and associate schools for the purpose. At present a Sanskrit Pathshala is conducted under its support at Rajapur. It also has a collection of rare books and manuscripts.

4.4.20 Sarvajanik Vachanalaya

Nasik Public Library possesses the book printed on Shila Press entitled 'Balabodh goshti' by R. Farer, which described different animals in Marathi as well as English in 42 pages. It is printed in R. Prera. Other old rare materials are Considerations of India affairs: Present state of Bengal and its dependencies, England, 1772, 183 pages; Algebra and Arithmetic and Mensuration published in 1817, 377 pages. Nasik library had separate section for holding more than 10,000 manuscripts.

4.4.21 Shardashram History Research Society and Public Library, Yavatmal

Renowned history research fellow late Dr. Y.K. Deshpande and Loknayak Bapuji Anne have established Shardashram in 1926. There are total 2,460 manuscripts available in this library. For collecting this material Dr. Y.K. Deshpande visited Peshawar and Afghanistan. He had collected many old historical volumes, coins, agreements, and panchangs.

4.4.22 Shri Bhavani Museum

Late Shrimant Bhavanrao alias Balasaheb Maharaj Pantpratinidhi (Raja of Aundh State) was a good artist and lover of art. He had a good collection of many paintings, statuary, sculptured pots, weapons and holy books and many more; he established Shri Bhavani Museum and Library in 1938. It has rich collection of 3761 paper manuscripts.

4.4.23 Smt. Nathibai Damodar Thakarsey women's University Library

There are just twelve manuscripts available in the central library Mumbai (SNDT Women's University Library Annual Report 2012-13, 2013).

4.4.24 Vaidik Samsodhan Mandal, Tilak Maharashtra University Campus: (*Library*, n.d.-b)

Tilak Maharashtra Vidyapeeth was established in 1921 in which the Vaidik Samshodhan Mandal was established on 1st August 1928. Researcher Trupti More (2015, p. 149) mentions that the Mandal has 15,700 paper and palm leaf manuscripts in Sanskrit and Marathi in Devanagari and Granth scripts, covering subject areas like Veda, Ramayana, Mahabharata, Purana, Jyotisha, and Ayurveda. The library of Tilak Maharashtra Vidyapeeth, which, according to their website, was established in 1965, has a collection of more than 1,00,000 books in subjects like Social Sciences, Sanskrit, Literature, Philosophy, Religion, Indology, Ayurveda, Management, Hotel Management, Physiotherapy, Nursing, Law, Library Science etc.

The library archival collection includes 2270 rare manuscripts in Sanskrit and Marathi belonging to 16th & 17th Century. Another 82 Tibetan manuscripts are also in the collection. A museum of artefacts used in Yagnya is also available.

Donations: The Mandal received grants and donations from various governmental and non-governmental organizations and individuals. Pune Municipality, Cultural Department, Ministry of Educantion, New Delhi granted Rs. 10,000/- each. For the manuscript collection the Ministry of Education has granted Rs. 30,000/-. In 1982-83 Pune Municipality released a special grant of Rs.5,000/- and in 1983-84 additional special grant of Rs. 4750/- .

Cataloguing: A total of nine descriptive catalogues of their manuscripts have been compiled. The catalogue contains 11 columns. The descriptive catalogue of Sanskrit manuscripts Vol.1 compiled by R.P. Goswami was published in 1998.

Digitization: Scanning & digitization of 1346 manuscripts has been completed which are stored as digital images in 39 discs in CD format.

4.4.25 Veda Shastrottejaka Sabha: (*Veda Shastrottejak Sabha*, n.d.)

Ved Shastrottejaka Sabha founded by Justice Ranade in 1875 for preservation of Vedic heritage and spreading Sanskrit education in the country through the learned pundits of Pune. There is evidence from the manuscripts of freedom fighter late Bal Gangadhar Tilak that a connection was maintained by this institute with Sri Sharada Peetham at Sringeri, as a referral authority in the Sanskrit language or interpretations

thereof. It conducts various examinations for vaidik students and have prepared CD version of Rgved in both sound and script.

There are other institutes mentioned on the website of IGNCA, such as Gokhle Research Institute, Pune, Pradnya Pathshala, Maharshi Vedvyas Pratishthan, Maharashtra Rajya Sangrahan Vibhag, Mumbai, Sachivalay Record Karyalay, Elphinstone College, Mumbai, Center for Education and Documentation Library, Mumbai, Bhosla Vedshastra Mahavidyalay, Nagpur, Vidarbha Sahitya Sangam Mandal, Nagpur, Anthropological Survey of India, Nagpur, Jamia Arabia Islamia, The Bhonsala Veda Shastra Mahavidyalaya, Sanatan Dharma Sabha Mandal, Darul-Uloom, C P and Berar Jain Research Institute, Khanqah-i Naqshbandiyah, Akola, Sanskrit Pathsala, Rajapur. However, none of these institutions host their websites nor any information is available about them on the internet. Questionnaires sent to them did not receive any reply.

4.5 Conclusion:

In this chapter, descriptive analysis of National Mission for Manuscripts (NMM) and its partner centers is carried out. Other institutions and centers where manuscript collection is available are also described. The description consists of a brief history of the institution, description of the collection including manuscripts, rare books and other significant material, budget, details of donations, documentation and cataloguing practices, conservation and preservation techniques adopted, microfilming and digitization done so far. The institutions are arranged according to the place they are located in. The analysis revealed that decades of efforts by various custodian institutions have enabled to collect manuscripts from individual donors and smaller institutions and secure their safekeep. A great deal of institutions has catalogued their collection and some have microfilmed and or digitized their collection. However, it is observed that there has been only one Manuscript Conservation Center in Maharashtra before the MCC was set up in Moolji Jaitha College in 2018, due to which curative conservation that was badly needed for many manuscripts in various centers was not properly provided. Thanks to the MCC at Moolji Jaitha College, preventive and curative conservation of manuscripts in the Deccan College has been commenced and hundreds of manuscripts are conserved extending their life considerably. It is noticed that most of the centers are acting only

as manuscript deposit centers falling short in terms of conducting periodic preventive and curative conservation. Efforts to provide periodic training to staff members in preventive conservation is also lacking. The next chapter provides statistical analysis of the manuscript centers in Maharashtra.

REFERENCES:

About Library. (n.d.). University of Mumbai. Retrieved January 11, 2021, from http://archive.mu.ac.in/service_library.html

About Us. (n.d.-a). Vedshstravidya.Com. Retrieved January 12, 2021, from https://vedshastravidya.com/

About us. (n.d.-b). The Asiatic Society of Mumbai. Retrieved January 12, 2021, from http://asiaticsociety.org.in/index.php/about-us/7-welcome-to-the-official-website-of-the-asiatic-society-of-mumbai

Alexander Kinloch Forbes. (2020). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Alexander_Kinloch_Forbes&oldid=990864847

Asiatic Society library goes digital with 10,000 books, 2,000 manuscripts. (2018, February 1). *The Indian Express*. https://indianexpress.com/article/cities/mumbai/asiatic-society-library-goes-digital-with-10000-books-2000-manuscripts-5046986/

Bharat Itihas Sanshodhak Mandal. (2020). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Bharat_Itihas_Sanshodhak_Mandal&oldid=992232920

Bhate, S. (2018, December 9). Krushnakaathach gnyanpeeth. *Loksatta*. https://www.loksatta.com/lekha-news/article-about-101th-anniversary-of-the-pradnya-pathshala-mandal-1802414/

Conservation and Preservation of Rare books and Manuscripts (pp. 1–7). (n.d.). Knowledge Resource Center University of Mumbai. https://mu.ac.in/wp-content/uploads/2020/01/Knowledge-Resource-Center-University-of-Mumbai.pdf

Damle, M., & Pate, N. (2004, January 23). Libraries struggle to preserve books. *The Times of India*.

Deshpande, N. J., & Panage, B. M. (2001, March). Digitization of Marathi Manuscripts. *CALIBER 2001*. CALIBER 2001, Pune.

Jha, P. (2021, February 7). *Kahi-Suni-Likhi: Vedic and Manuscripts traditions of India and their Contemmporary Relevance*. 3:00-5:00 PM, New Delhi. https://us02web.zoom.us/webinar/88974338999

Joshi, L. (1970). *Descriptive Catalogue of Sanskrit Manuscripts: Vol. I*. Prajna Pathasala Mandala.

Kanga, M. F., & JamaspAsa, K. M. (1990). CAMA ORIENTAL INSTITUTE. In *Encyclopaedia Iranica: Vol. IV* (7th ed., pp. 722–724). https://iranicaonline.org/articles/cama-oriental-institute-k

Kumar, A. (2014). *A critical study of art manuscripts in Himachal Pradesh* [PhD Thesis, Himachal Pradesh University]. http://hdl.handle.net/10603/128156

Library. (n.d.-a). Ananthacharya Indological Research Institute. Retrieved January 12, 2021, from https://www.ananthacharyainstitute.edu.in/Library.php

Library. (n.d.-b). Tilak Maharashtra Vidyapeeth. Retrieved January 12, 2021, from http://www.tmv.edu.in/library.asp

LIBRARY | University of Mumbai. (n.d.). Retrieved January 11, 2021, from https://mu.ac.in/library

LIBRARY COLLECTION. (n.d.). CHANDMAL TARACHAND BORA COLLEGE. Retrieved January 12, 2021, from https://www.ctboracollege.edu.in/index.php/about/facilities/library-information-center/library-collection

Londhe, N. L., Desale, S. K., & Patil, S. K. (2011). Development of a digital library of manuscripts A case study at the University of Pune, India. *Electronic Library and Information Systems*, *45*(2), 135–148. https://doi.org/DOI 10.1108/00330331111129697

Manuscripts. (n.d.). The Asiatic Society of Mumbai. Retrieved January 12, 2021, from http://asiaticsociety.org.in/index.php/holdings/manuscripts

More, T. D. (2015). *Role of oriental libraries in India with special reference to Deccan* [PhD Thesis, Tilak Maharashtra Vidyapeeth]. http://hdl.handle.net/10603/120584

Munshi Saraswati Mandir Granthagar. (n.d.). Bharatiya Vidya Bhavan. Retrieved January 12, 2021, from http://www.bhavanslibrary.org/History-Milestones

National Mission for Manuscripts. (n.d.). Retrieved January 10, 2020, from https://namami.gov.in/

National Mission for Manuscripts. (2002). *Vihangama The IGNCA Newsletter*, *IV*(July-Aug). http://ignca.gov.in/national-mission-for-manuscripts/

Preserving more Marathi manuscripts and making them accessible—Major project (EAP023). (2017, September 6). Endangered Archives Programme. https://eap.bl.uk/project/EAP248

Research Library. (n.d.). Chhatrapati Shivaji Maharaj Vastu Sangrahalaya. Retrieved January 16, 2021, from https://www.csmvs.in/research/research-library

Sahoo, J., Sahoo, B., Mohanty, B., & Dash, N. K. (2013). Indian Manuscript Heritage and the Role of National Mission for Manuscripts. *Library Philosophy and Practice*. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2384&context=libphilprac

Sarvakaryeshu Sarvadaa: Saanskrutik Sanchit. (2020, August 22). *Loksatta*. https://www.loksatta.com/vishesh-news/loksatta-sarv-karyeshu-sarvada-article-on-pradnya-pathshala-wai-abn-97-2252247/

SNDT Women's University Library Annual Report 2012-13. (2013). SNDT Women's University. https://sndt.ac.in/pdf/downloads/annual-reports/12-13/ar-12-13-section13.pdf

The Heras Institute. (n.d.). St. Xavier's College Autonomous, Mumbai. Retrieved January 13, 2021, from http://xaviers.edu/main/index.php/the-heras-institute

Veda Shastrottejak Sabha. (n.d.). Sri Sringeri Sharada Peetham. Retrieved January 12, 2021, from https://www.sringeri.net/branches/maharashtra/pune/veda-shastrottejak-sabha

CHAPTER – V

Analysis and Interpretation of Data: Conservation and Digitization Efforts in NMM Partner Centers in Maharashtra

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5.0 Introduction

5.1 Analysis of Respondents' Response to the parameters of Questionnaire

5.1.1 Analysis of Data Collected about the Institution and its Objectives

5.1.2 Analysis of Data Collected on Facilities provided for the Researchers

5.1.3 Analysis of Data Gathered on Collection Development

5.1.4 Analysis of Data on Financial Standing of the Institutions

5.1.5 Analysis of Data on Management and Staffing and Training

5.1.6 Analysis of Data gathered on Type of Collection

5.1.7 Analysis of Data Collected about Arrangement Preservation Procedures Policies and Maintenance

5.1.8 Analysis of Data Pertaining to Curative and Preventive Conservation of MSS Carried out by Various Partner Centers since their Inception

5.1.9 Analysis of Data in Respect of Organization of MSS in Various Partner Centers

5.1.10 Analysis of Data in Respect of Publication of Descriptive Catalogues and Books based on the MSS Collections by Various Partner Centers

5.1.11 Analysis of Data on the Digitization Efforts by Various NMM Partner Centers

5.1.12 Analysis of Data in respect of Constraints and Challenges faced by the Partner Centers in Locating, Conserving and Digitally Preserving the Manuscripts

5.1.13 Analysis of Data about Envisaged Future Plans of Various Partner Centers

5.2 Conclusion

Chapter – V

Analysis and Interpretation of Data: Conservation and Digitization Efforts in NMM Partner Centers in Maharashtra

5.0 Introduction:

The descriptive analysis of the data collected through direct observation, questionnaires and personal interviews is conceptually analyzed, tabulated and presented in the Chapter IV. This chapter analyses the data statistically and presents the analysis through tables and pie charts. The data gathered is compared with the hypotheses of the research to validate or invalidate the hypotheses.

Data Collection: Data collection was done primarily through a questionnaire. The questionnaires were sent both as softcopy as well as hardcopy to the NMM partner centers as well as other reputed centers having manuscript collections to gain information about their collection, their manuscript conservation and digital preservation efforts. Other chief source of gathering information about the centers was through the websites of their respective organizations. Catalogues, pamphlets and brochures published by various center were collected and consulted for obtaining information. The researcher also obtained information through personal visits and telephonic conversations with concerned authorities of various centers.

Questionnaire: An elaborate questionnaire consisting of 186 questions has been prepared after consulting and minutely studying questionnaires prepared by various researchers in the past who studied various aspects relating to manuscript conservation and digitization for their respective studies. The questionnaires compiled by Das (2008), Khan (2019), More (2015), Sharma (2011) and Madhusudan (2017) were very helpful and need a special mention. The questions were classified and organized into twelve heads such as a. General Information, b. Collection, c. Finance, d. Arrangement, e. Organization, f. Accessibility, g. Preservation & Conservation Facilities and Equipment, h. Preservation Procedures Policies and Maintenance, i. Management (About Staff), j. Digitization, k. Digitization Technicalities and l. Future Plans & General Suggestions. All the respondents left the questions pertaining to digitization blank stating either that it was carried out by a third party whose specifications were finalized by the NMM or that the digitization is

yet to commence. Hence NMM specifications are noted as the default digitization specifications in such cases. None of the respondents gave any suggestions under head 'General Suggestions'. Two institutions, namely The Bhandarkar Oriental Research Institute, Pune and Prajna Pathashala (PP), Wai refused to fill the questionnaire. Hence the researcher had to rely on the information available on the website of BORI and the descriptive catalogue published by PP for compiling the data for this study. The Director of BORI maintained that unless there is a written advice from the NMM to provide information to the researcher, the information would not be shared. The researcher sent an email to the Director of NMM requesting to provide information about NMM partner centers in Maharashtra and directing BORI to share information with the researcher. In return the researcher received a crisp reply from the Director, NMM to rely on the information available on the NMM's website and many good wishes for the research. Repeated correspondence with other officials of NMM also yielded no results. Hence the data in respect of the NMM, BORI and PP is sourced from their respective websites (in case of NMM and BORI) and descriptive catalogue (in case of PP). Other centers have been extremely cooperative in providing the data desired, despite the fact that the questionnaire was very lengthy.

5.1 Analysis of Respondents' Response to Various Parameters of the Questionnaire

5.1.1 Analysis of Data Collected about the Institution and its Objectives

Information pertaining to the organization in respect of date of establishment, objectives of that guided its origination, brief history of the organization, nature of establishment, etc., were collected apart from other information such as administrative set up, contact details, person responsible for manuscript safe keeping etc. The data gathered is summarized and tabulated below:

Institute	To carry out research	To publicize and propagate history and culture	To arouse interest about Indian history, culture and tradition	To Preserve Manuscript Heritage for posterity
UoM	✓	✓	✓	✗
SFGS	✓	✓	✓	✓
AS	✓	✓	✓	✓
BORI	✓	✓	✓	✓
PP	✓	✓	✓	✓
IVKRSM	✓	✓	✓	✓
FC	✓	✓	✓	✗
SVM	✓	✓	✓	✓
MJC	✓	✓	✓	✗
IOS	✓	✓	✓	✓
BKKRC	✓	✓	✓	✗
KKSU	✓	✓	✓	✗
VSVSM	✓	✓	✓	✓

Table: 5.1.1.1: Objectives of Manuscript Custodian Centers

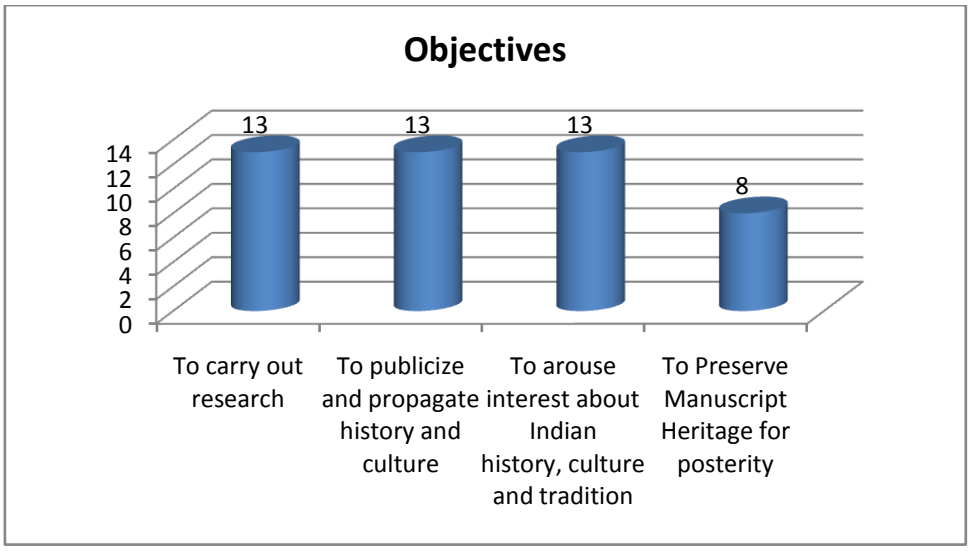


Fig 5.1.1.1: Objectives of Manuscript custodian centers

Institute	Academic	Society	Archives	Special Lib.	Community
UoM	✓				
SFGS		✓	✓		✓
AS		✓	✓	✓	
BORI		✓	✓	✓	
PP	✓	✓	✓	✓	✓
IVKRSM		✓	✓	✓	
FC	✓				
SVM		✓	✓	✓	
MJC	✓	✓			
IOS	✓	✓	✓	✓	
BKKRC	✓				
KKSU	✓				
VSVSM	✓	✓	✓	✓	✓

Table 5.1.1.2: Types of Manuscript Custodian Centers

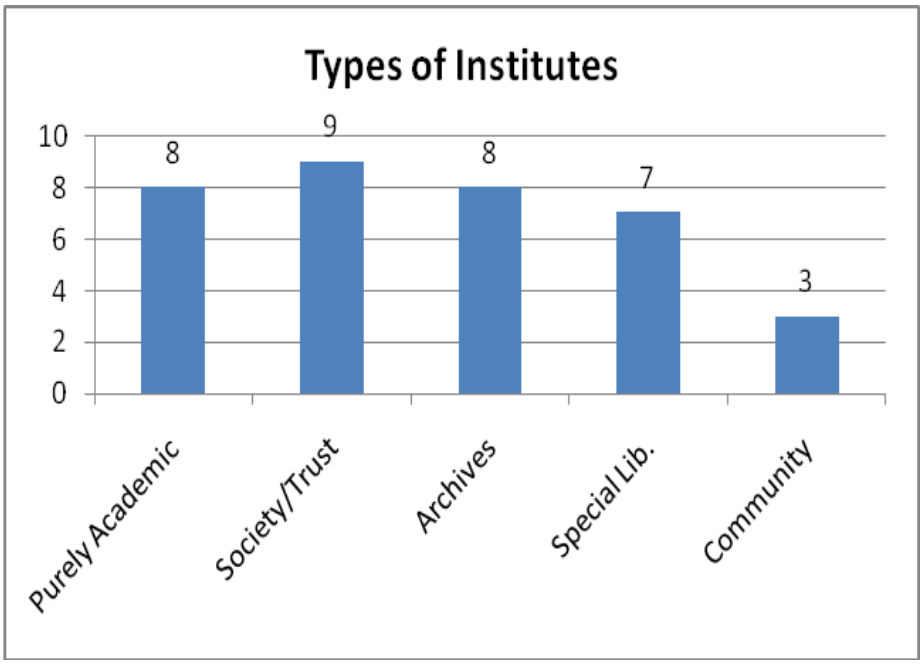


Fig 5.1.1.2: Types of Manuscript Custodian Centers

Institute	< 25 Yr. Old	25 - 50 yrs.	51 - 75 yrs	76 - 100 yrs.	101 - 125 yrs.	126 - 150 yrs.	151 - 175 yrs.	Year Estd.	Age of Institute	MRC / MCC Estd. Date	Age of MRC / MCC
UoM							✓	1857	164	Θ	Θ
SFGS							✓	1865	156	Θ	Θ
AS						✓		1888	133	2006	15
BORI					✓			1917	104	2003	18
PP					✓			1920	101	Θ	Θ
IVKRSM				✓				1927	94	2006	15
FC				✓				1929	92	2013	8
SVM				✓				1935	86	Θ	Θ
MJC				✓				1945	76	2018	3
IOS		✓						1983	38	2005	16
BKKRC		✓						1988	33	2006	15
KKSU	✓							1997	24	2004	17
VSVSM	✓							1999	22	Θ	Θ

Table 5.1.1.3: Year of Establishment of the Institute vis-à-vis MRC/MCC status

Θ None of the officials of the respective institutions are aware of any recognition by the NMM.
***** Though the University of Kolhapur was established in 1962, the Archival cell of BBKKRC was established in 1988.
** Though Fergusson College was established in 1885, the Bai Jerbai Wadia library came into being in 1929.

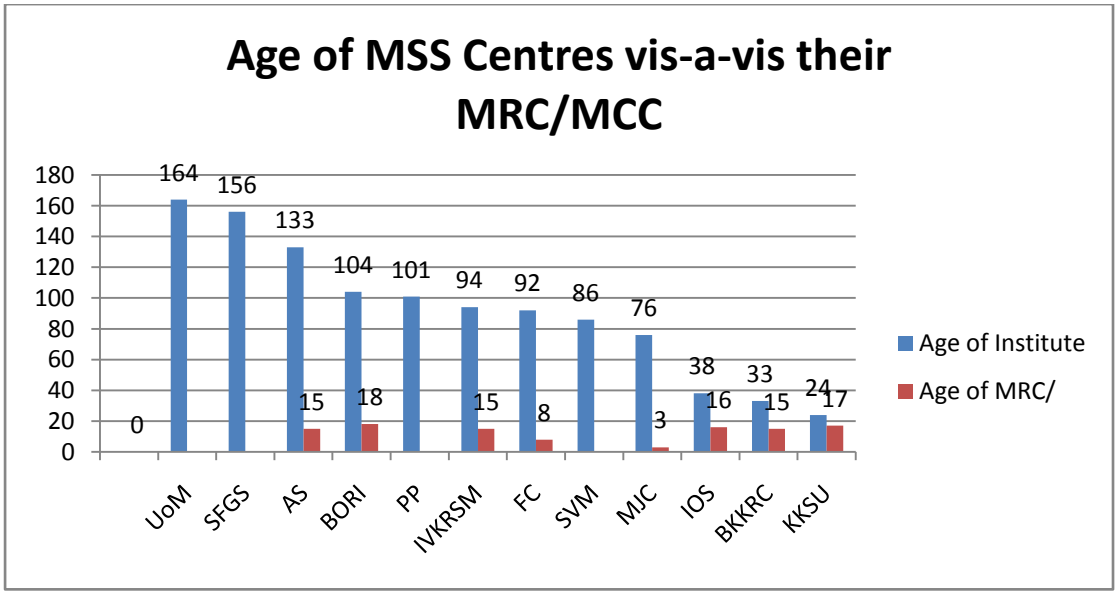


Fig 5.1.1.3: Year of Establishment of the Institute vis-à-vis MRC/MCC status

Data Interpretation and Hypothesis Validation: Of the 13 partner centers, 8 (61.53%) identify themselves as academic, 9 (69.23%) as registered Society/Trust, 7 (53.84%) as special library and 3 (23.07%) as community oriented establishments. Most of the centers have selected multiple options as the roles played by them are varied. It may also be noted that only 3 centers (23.07%) are established less than 25 years ago, 2 centers (15.38%) between 25 -50 yrs., 4 centers (30.76%) between 76 - 100 yrs., 2 centers (15.38%) 101-125 yrs., and 1 center each are established between 126 -150 yrs., and 150 - 175 years.

The above data analysis shows that **the first hypothesis 'various partner centers of NMM in Maharashtra have been established with similar objectives' gets completely validated** as all the NMM partner centers (100%) have agreed that the objectives that guided establishment of their centers were 'to carry out research, publicize and propagate history and to arouse interest about Indian history, culture and tradition'. 8 of the 13 centers (61.53%) were established with the sole objective of preserving the manuscript heritage for posterity. It may be pointed out that though other centers also acquired MSS in the course of their existence but manuscript preservation for the posterity was not the sole aim behind their establishment.

5.1.2 Analysis of Data Collected on Facilities provided for the Researchers

Information was solicited t about various facilities offered to the visitors in general and research scholars in particular by the institution such as number of working days in a month, number of working hours in a day, reading room facility, seating facility including availability of research cubicles, boarding and lodging facility, membership details, provision of digital copies, provision of direct access to originals, etc. Further details were also gathered in respect of average number of visitors in last 5 years. The data collected is tabulated and analyzed below:

Institutes Types	No. of Working Days in a month	No. of working Hrs./Day
UoM	24	9
SFGS	22	7
AS	24	6
BORI	24	8
PP	24	7
IVKRSM	24	7
FC	24	10
SVM	24	6
MJC	24	7
IOS	24	5.5
BKKRC	22	7.7
KKSU	22	7.75
VSVSM	24	3

Table: 5.1.2.1: Working days and hours

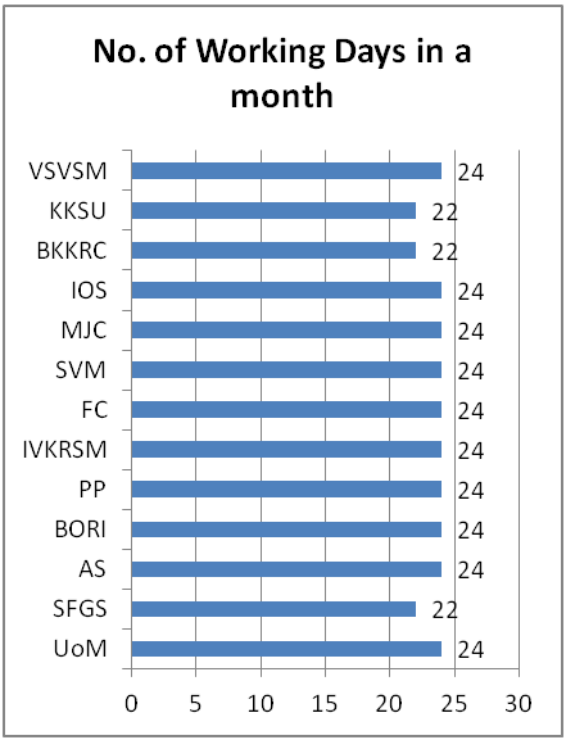


Fig 5.1.2.1: Number of working days in a month

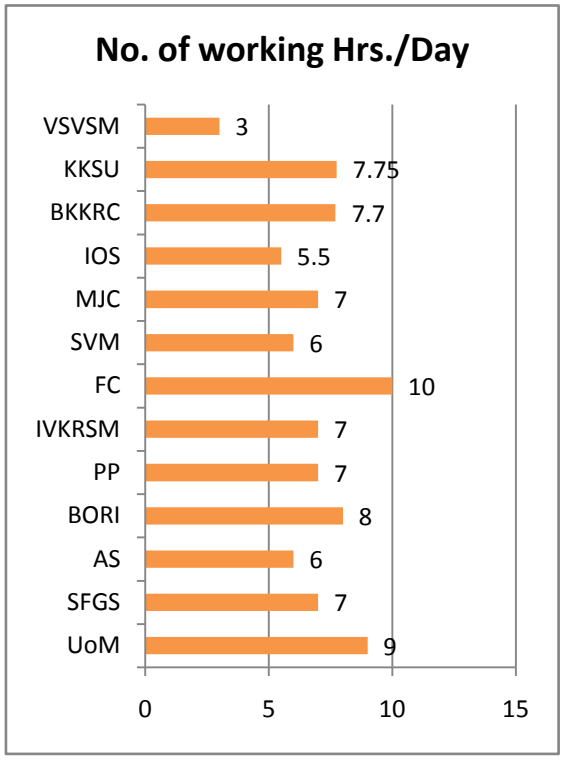


Fig 5.1.2.1a: Working hours per day

Institutes	Photocopying
UoM	Yes
SFGS	Yes
AS	Yes
BORI	Yes
PP	DNA
IVKRSM	Yes
FC	Yes
SVM	Yes
MJC	Yes
IOS	Yes
BBKKRC	DNA
KKSU	Yes
VSVSM	No
Yes	10
No	1
DNA	1

Table: 5.1.2.2: Photocopy facility

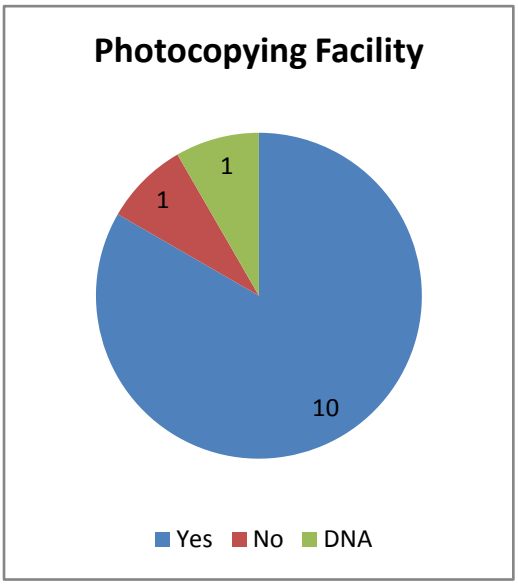


Fig: 5.1.2.2: Photocopying Facility

Institutes	Reading Room	No. of Seats	No of Cubicles
UoM	✓	100	35
SFGS	✓	15	1
AS	✓	2	0
BORI	✓	DNA	DNA
PP	✓	DNA	DNA
IVKRSM	✓	25	1
FC	✓	450	7
SVM	✓	10	1
MJC	✓	110	4
IOS	✓	50	15
BKKRC	✓	100	No
KKSU	✓	80	2
VSVSM	✓	30	0

Table 5.1.2.3: Reading facilities

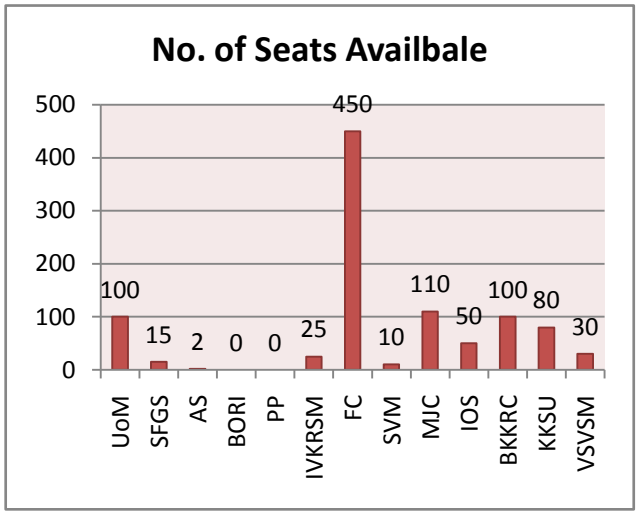


Fig 5.1.2.3: Number Seats Available

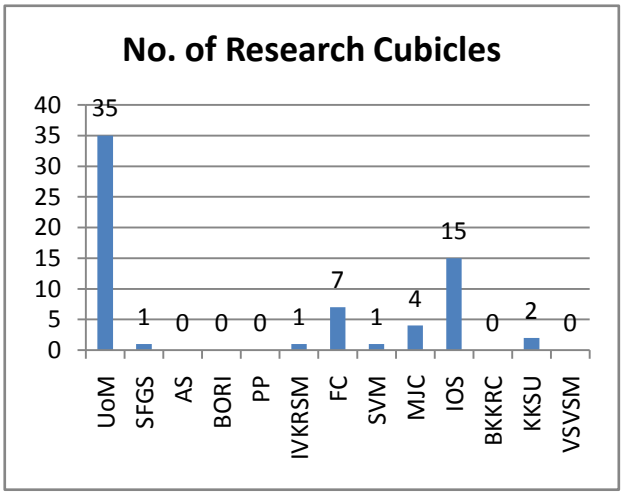


Fig 5.1.2.3a: Number of Research Cubicles

Institutes	Boarding & Lodging	Membership	
		Free	Charged
UoM			✓
SFGS			✓
AS	✓		
BORI			
PP			
IVKRSM	✓		✓
FC	✓		✓
SVM	✓		✓
MJC	✓	✓	
IOS		✓	
BKKRC	✓		✓
KKSU		✓	
VSVSM		✓	

Table 5.1.2.4: Boarding and Membership

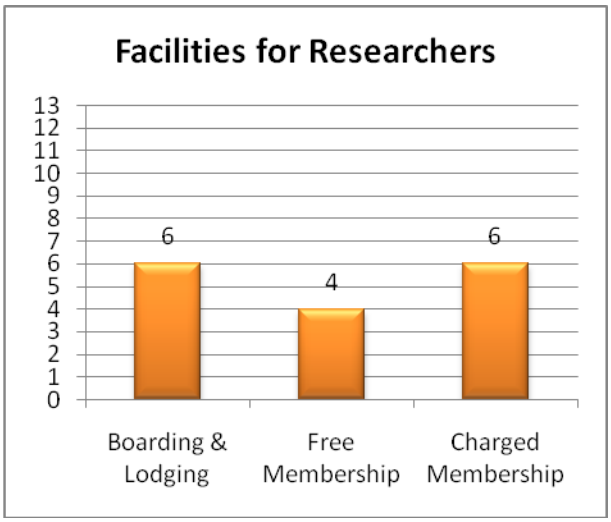


Fig. 5.1.2.4 : Boarding and Membership

Institutes	Provision of Digital copies	Direct Access to Originals	Avg. No. of Visitors in last 5 Yrs.
UoM	No	No	6
SFGS	✓	No	25
AS	No	No	160
BORI	DNA	DNA	DNA
PP	DNA	DNA	DNA
IVKRSM	No	No	2300
FC	✓	No	5
SVM	No	✓	15
MJC	No	No	2
IOS	No	✓	170
BKKRC	No	NO	4
KKSU	✓	No	2
VSVSM	✓	✓	3

Table 5.1.2.5: Access to MSS & Avg. No. of Visitors
* DNA Data not available

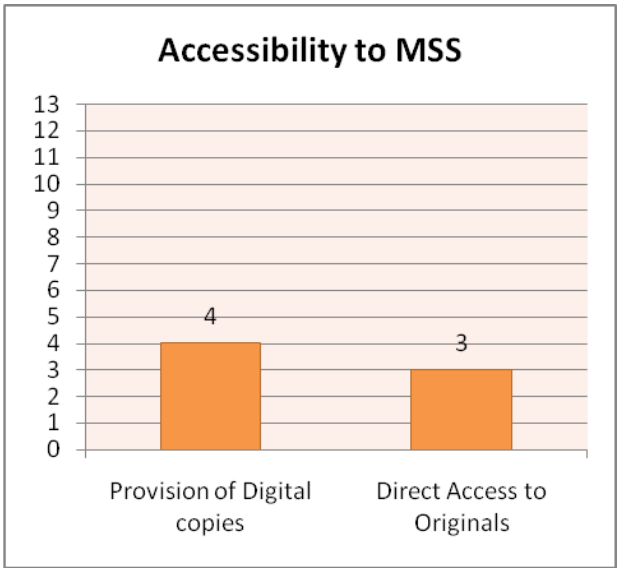


Fig 5.1.2.5: Access to MSS

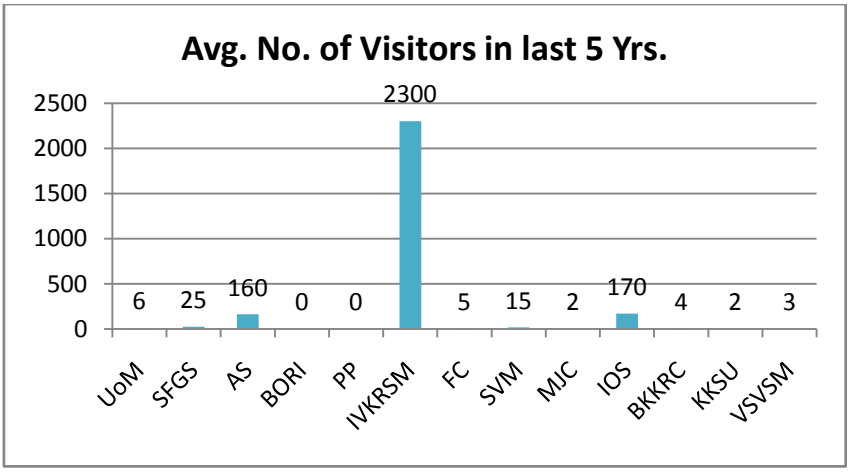


Fig 5.1.2.5a: Average No of Visitors in the Last 5 Yrs.

Interpretation and Validation of Hypothesis: Availability of the center open during working days for a reasonable number of hours per day is important from the visitors' perspective. It has been found that except for 3 centers (KKSU, BBKKRC, SFGS) (23.07%) which are open on an average for 22 days in a month (excluding holidays) all the remaining centers (76.92%) are open for 24 days in a month. Thus all the centers are open for visitors for at least 20 days in a month which is satisfactory. As regards to the number of working hours per day, VSVSM is the only center that is open for just 3 hours a day. Rest 11 centers (84.61%) operate averaging to about 6 hours a day which is reasonable. Other significant facilities researchers expect are the availability of adequate reading space and privacy of research cubicles. While UoM has largest number of research cubicles (35), whereas AS has facility for two researchers at a time. According to the FC website, the reading room of FC is perhaps one of the largest reading rooms of any library in the state of Maharashtra with 450 seats. KKSU, SFGS, FC, VSVSM provide digital copies to the visitors, whereas IOS and SVM provide direct access to originals. It is disheartening to note that very few researchers take interest in the MSS. The number of visitors in last 5 years in 8 centers (61.53%) is less than 30 per year. Only IVKRSM claims that it has average visitors of 2300 per annum. The data in respect of two centers (BORI and PP) were not provided. 6 centers (46.15%) even offer boarding and lodging facilities. In IOS though the access to MSS is free, there is a provision for voluntary fee of Rs. 250 per year. In BBKKRC, membership of Rs. 20 per day and Rs. 500 life membership for Sr. Citizens and Rs.1000 life membership for others are available. In SFGS there is an annual fee of Rs.1000 per annum and a charge of Rs. 20 per day. In SVM no charge is levied for boarding and lodging in the institute. The Mandal provides lunch to the researchers at a nominal cost of Rs.60. There is a membership fee of Rs.250 and Rs.50 per bundle is levied as handling charges. Photocopy charges are collected extra. In IVKRSM Rs. 20 per day is charged from the researcher availing the services. The manuscript collection in VSVSM is open to all. In the UoM, there are multiple options for the visiting researchers ranging from Rs.20 per day or Rs. 75 per week or Rs.120 per fortnight, etc.

The above analysis of data clearly upholds the second hypothesis that 'various partner center of NMM in Maharashtra have good facilities for the researchers'.

5.1.3 Analysis of Data Gathered on Collection Development

Collection development is a very important activity of a manuscript custodian institution. While it is a common practice to acquire manuscripts from individual and institutional donors, collection development through purchase is also very prevalent in the world scenario. The manuscript custodian and conservation centers were asked about their collection development practices and it is found that almost all the centers developed their collection through gratis. The following table depicts the source of collection in various institutions:

Institute	Donation	Donation + Purchase
UoM	✓	No
SFGS	✓	No
AS	✓	No
BORI		✓
PP	✓	No
IVKRSM	✓	No
FC	✓	No
SVM	✓	No
MJC	✓	No
IOS	✓	No
BKKRC	✓	No
KKSU	✓	No
VSVSM	✓	No
Yes	**12**	**1**

Table 5.1.3.1: Collection development

Fig 5.1.3.1: Collection development

Interpretation and Validation of Hypothesis: Collection development is recognized as the challenging task world over for any Archival center. While it is a common practice to acquire MSS through purchase in many centers across the museums and archival centers, it is found that all the NMM partner centers in Maharashtra (100%) predominantly acquired their MSS collection through voluntary donation by individuals and sometimes by institutions**. Thus the hypothesis that 'various partner centers of NMM in Maharashtra primarily develop their collection through donations' is upheld.**

5.1.4 Analysis of Data on Financial Standing of the Institutions

One of the important factors determining the efficiency of an institution in the conservation of the manuscript heritage is its financial soundness. Information regarding the source of funding, annual budgetary allocations, building condition, adequacy of funding etc., have been gathered and analyzed hereunder:

Institute	Own Fund	Fund from NMM for MRC/MCC	Govt. Funds	Donations	Amount / Annum
UoM		No	✓		
SFGS	✓	No		✓	850000
AS	✓	No			200000
BORI		✓	✓		
PP	✓	No		✓	
IVKRSM	✓	No		✓	900000
FC		No	✓		
SVM	✓	No		✓	600000
MJC		✓	✓		750000
IOS	✓	No			600000
BKKRC		✓	✓		
KKSU		No	✓		
VSVSM		No		✓	450000
Yes	**6**	**3**	**6**	**5**	

Table 5.1.4.1: Sources of funding and Annual Budget

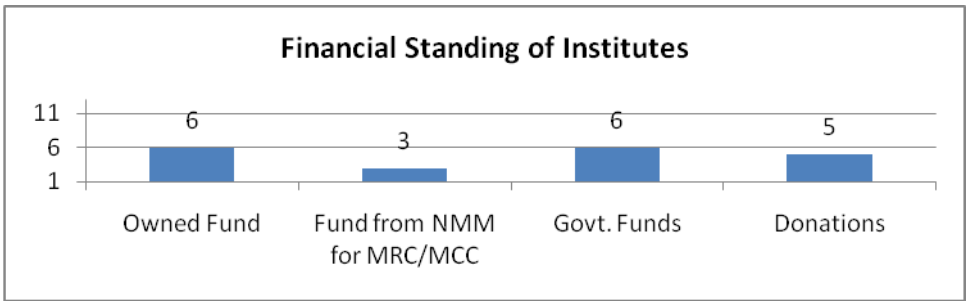


Fig 5.1.4.1: Sources of funding

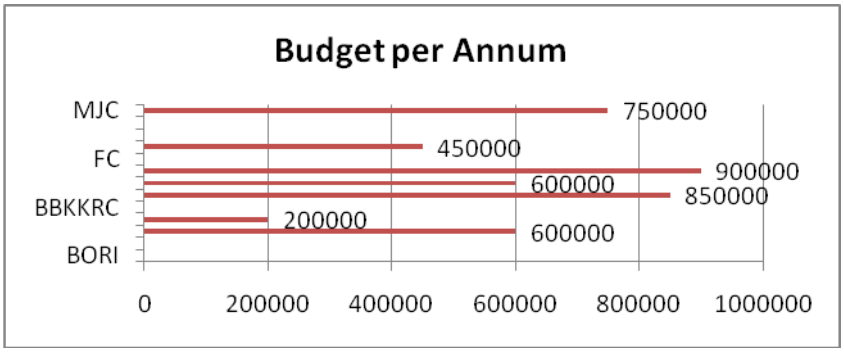


Fig 5.1.4.1a: Budget per Annum

Institutes Types	Adequacy of funds	Regular Funding
UoM	✓	No
SFGS	No	No
AS	No	No
BORI	✓	✓
PP	No	No
IVKRSM	No	No
FC	No	No
SVM	No	No
MJC	No	✓
IOS	No	No
BKKRC	✓	✓
KKSU	✓	No
VSVSM	No	No
Yes	4	3
No	9	10

Table 5.1.4.2: Adequacy & Regularity of Fund

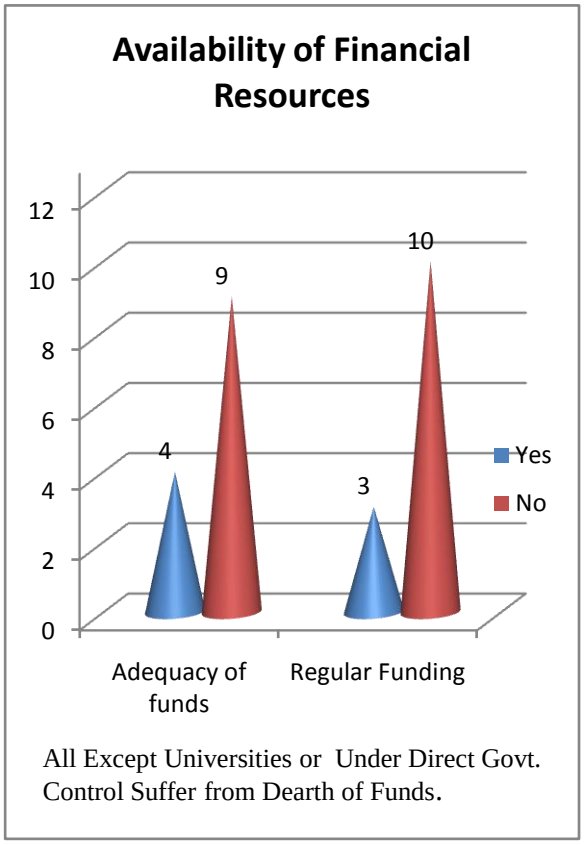


Fig 5.1.4.2: Adequacy & Regularity of Fund

Institute	* Own Building?	Condition	Needs Repair?
UoM	✓	Good	✓
SFGS	Leased	Good	✓
AS	✓	Good	No
BORI	✓	Good	✓
PP	✓	Poor	✓
IVKRSM	✓	Good	✓
FC	✓	Good	No
SVM	✓	Good	No
MJC	✓	Good	✓
IOS	Leased	Good	✓
BKKRC	✓	Good	No
KKSU	✓	Good	No
VSVSM	✓	Good	✓
Yes/Good	11	12	8
No/Poor	2	1	5

Table 5.1.4.3: Building Ownership and condition

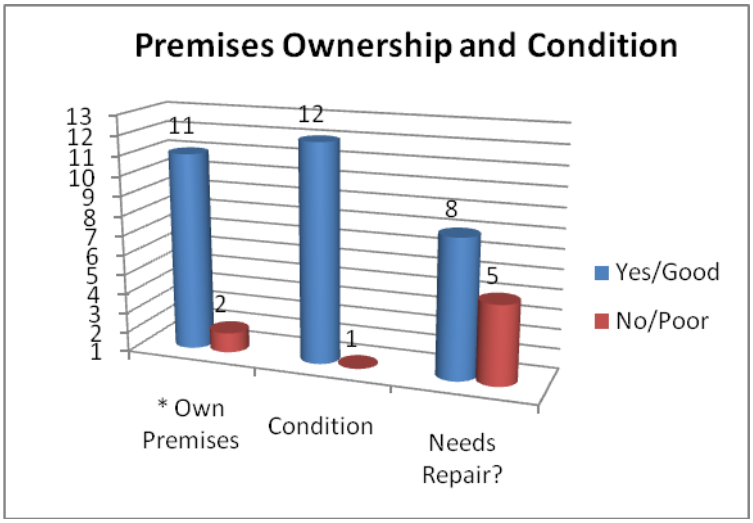


Fig 5.1.4.3: Building Ownership and condition

Interpretation and Hypothesis Validation: 6 out of 13 centers (46.15%) are operating using their own funds and only 3 centers receive fund from NMM in the capacity of MRC/MCC. 6 centers (46.15%) have received funds from other government agencies in the past. 5 centers (38.46%) rely on the donations received from time to time from the donors. The budgetary allocations of these NMM partner centers range from 2 lakhs per annum (AS) to 9 lakhs per annum (IVKRSM). It is important to note that 9 out of the 13 centers (69.23%) claim inadequacy of funds and 10 centers maintain that they have not received regular funding from the NMM. 11 centers (84.61%) are located in their own building and 12 centers (92.30%) report that the condition of their building is good. 8 centers (61.53%) point out need for IOS and SFGS are located in leased premises. Hence the hypothesis that 'various partner centers of NMM in Maharashtra have sound financial standing' is invalidated as almost all the centers complain of inadequacy of funds.

5.1.5 Analysis of Data on Management and Staffing and Training

Information regarding adequacy of staff, whether conservation training is received by them and if so whether they are satisfied with the training imparted, person responsible for the conservation activity have been studied. They are summarized below:

Responsible Person	Librarian / Asst. Librarian / Project Coordinator	Conservationist	Administrator / Trustee	Total No. Of Staff
UoM	✓			25
SFGS	✓			2
AS			✓	2
BORI			✓	11
PP			✓	2
IVKRSM			✓	17
FC	✓			18
SVM			✓	4
MJC	✓			4
IOS	✓			2
BBKKRC		✓		1
KKSU	✓			5

Table 5.1.5.1: Person Responsible for MSS Safety and Conservation

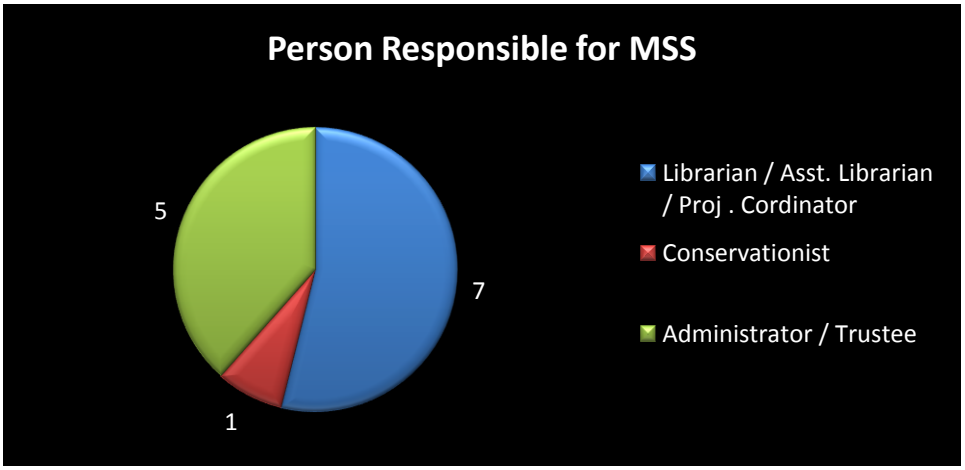


Fig 5.1.5.1: Person Responsible for MSS Safety and Conservation

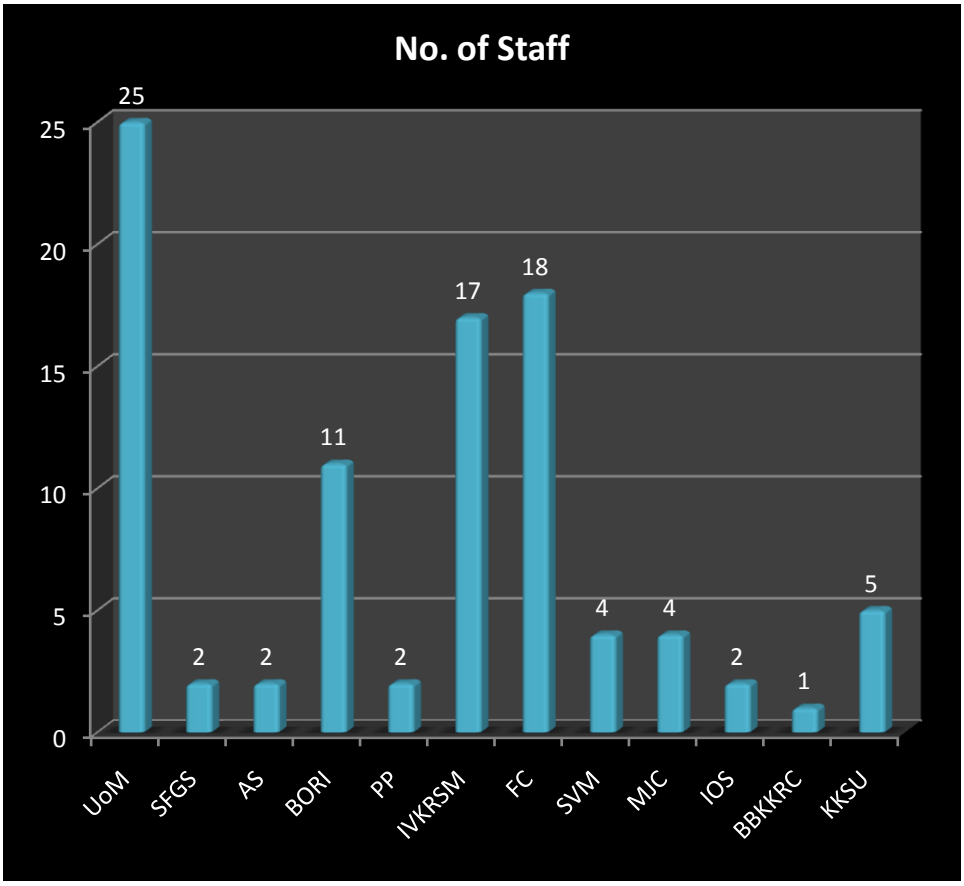


Fig 5.1.5.1a Number of Staff in Various MSS Centers

Institute	No of Trained personnel	Periodic training	Training adequate?
UoM	0	No	No
SFGS	0	No	No
AS	1	No	No
BORI	1	✓	✓
PP	0	No	No
IVKRSM	2	No	No
FC	0	No	No
SVM	3	No	No
MJC	3	✓	✓
IOS	0	No	No
BKKRC	1	No	No
KKSU	0	No	No
VSVSM	2	✓	No
Yes		**3**	**2**
No		**10**	**11**

Table 5.1.5.2: Trained Personnel, Periodic Training and its Adequacy

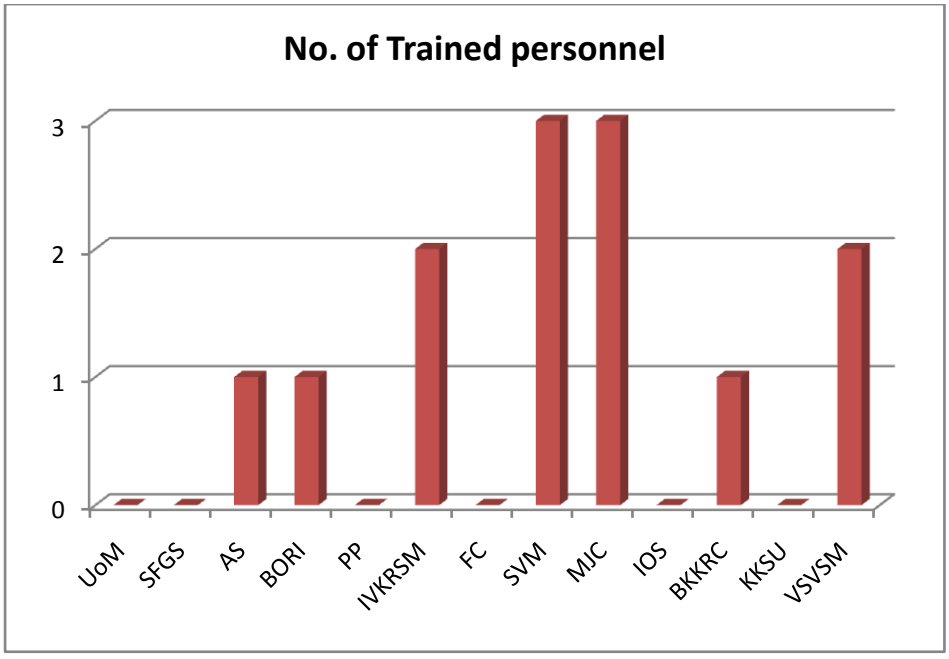


Fig 5.1.5.2: Number of Trained Personnel in Various MSS Centers

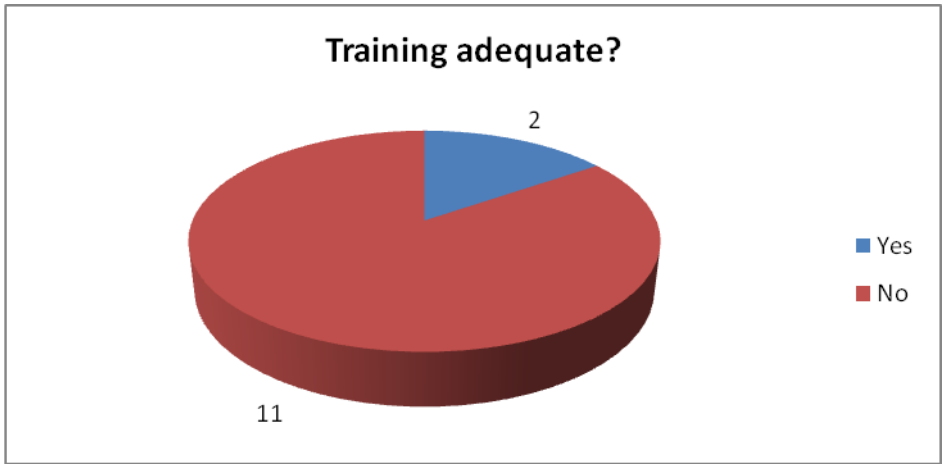


Fig 5.1.5.2a: Adequacy of Training

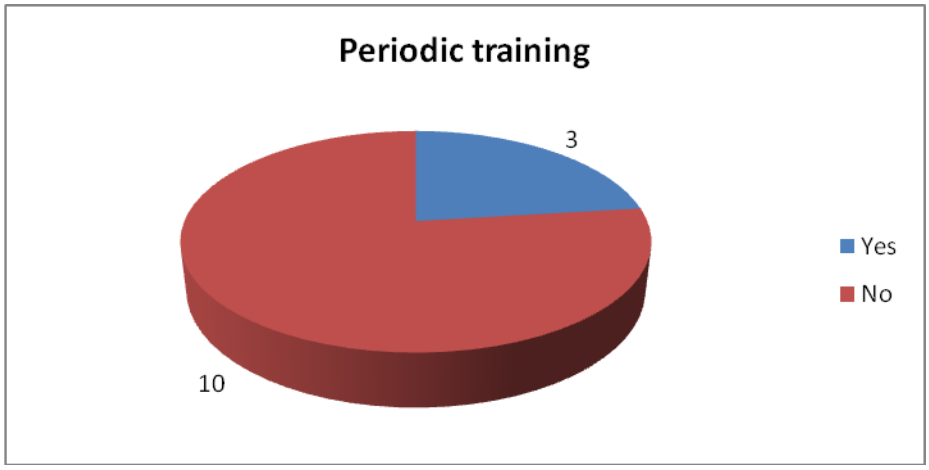


Fig 5.1.5.2b: Periodic Training Conducted?

Interpretation and Hypothesis Validation: In 7 centers (53.84%), the Librarian, Assistant Librarian or the Project Coordinator is the in charge of MSS collection of the respective centers. One center has a full time Conservationist (7.69%) appointed to look after the MSS collection. In the remaining 5 centers (38.46%) the Administrative Officer or Trustee is vested with the responsibility of looking after the MSS collection. The number of staff in each center ranged from just one staff (BBKKRC) to 25 (UoM) and 5 centers operating with just 2 staff members. It may be pointed out that in case of the MSS custodian centers operating from with in a university or a higher education institute, the number of staff reported is the entire library staff and that no separate staff is allotted for the exclusive job of looking after the manuscript collection. Only 2 centers (15.38%) have 3 trained personnel and 2 (15.38%) other centers have 2 and 3 (23.07%) centers have one trained personnel in manuscript conservation. Remaining 6 (46.15%) centers have no trained persons in MSS conservation. 11 of the 13 centers (84.61%) point out that their staff members did not receive adequate training in manuscript conservation. 10 out of 13 centers (76.92%) maintain that their staff members do not get exposed to periodic training with regard to preventive and curative procedures and latest trends and developments in conservation of MSS.

Thus the fifth hypothesis 'Various partner centers of NMM in Maharashtra have trained manpower' fails to get validated.

5.1.6 Analysis of Data gathered on Type of Collection

The manuscript centers of Maharashtra have a very rich and significant collection in terms of their heritage and historical value. The researcher studied the type of collection of various centers. Variety of subjects, languages and scripts, variety in media, rare books and other collections, period-wise distribution etc., have been studied and tabulated:

Institute	Total No. of MSS	Paper	Birch bark	Palm leaf	Illustrated
UoM	8870	8794	0	76	1
SFGS	1700	1700	0	0	0
AS	15788	15100	0	102	120
BORI	32000	30,000	150	350	0
PP	12000	12000	0	0	0
IVKRSM	3050	3043	2	5	0
FC	1451	1396	0	55	0
SVM	5000	5000	9	9	62
MJC	339	339	0	0	10
IOS	2800	2799	0	1	0
BKKRC	9163	9163	0	0	0
KKSU	3000	2900	0	0	11
VSVSM	8000	8000	0	0	0

Table 5.1.6.1: Variety of Manuscript Collection

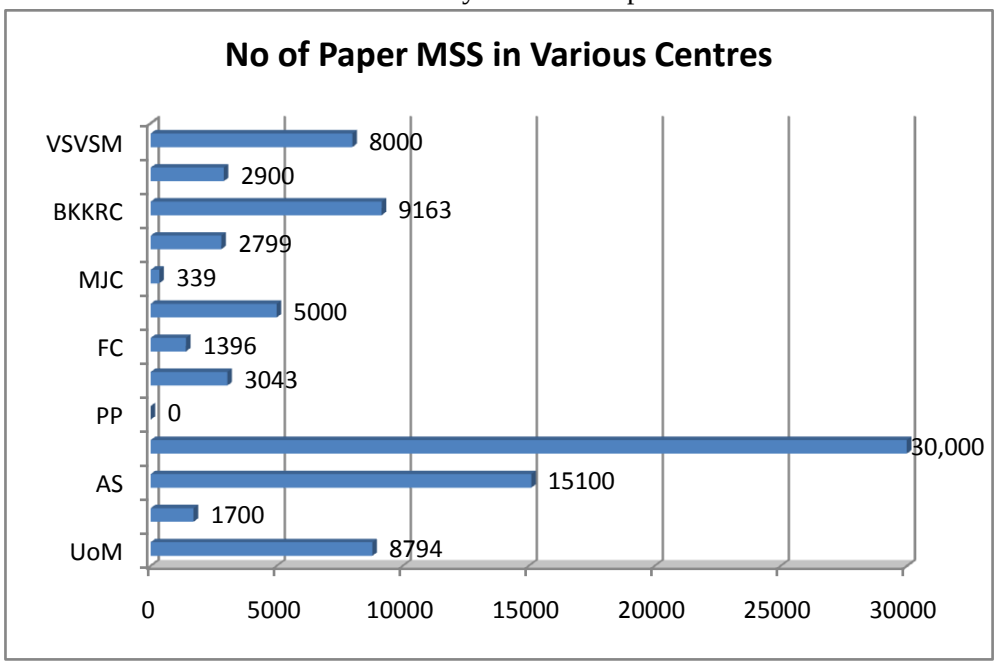


Fig 5.1.6.1: No. of Paper MSS in Various Centers

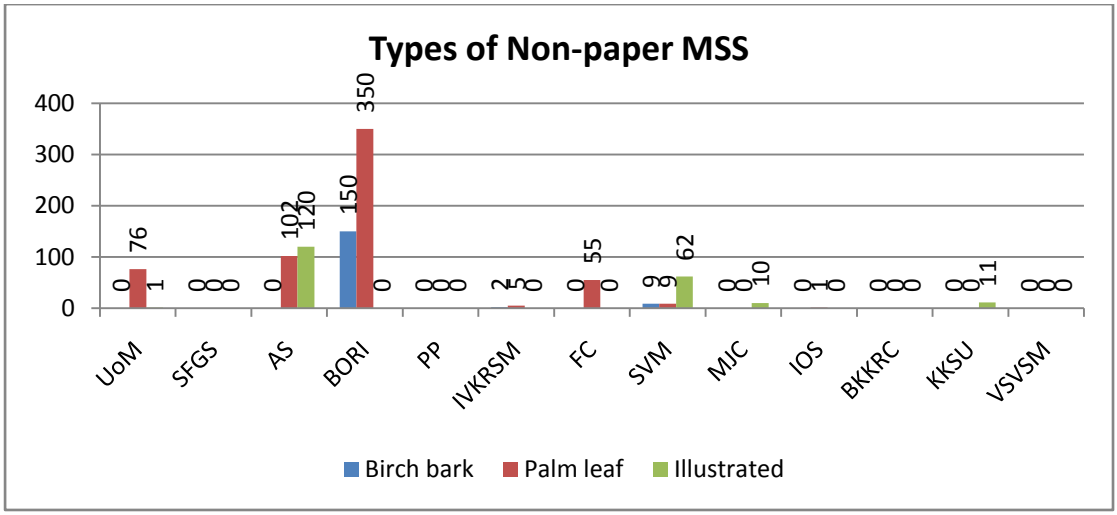


Fig 5.1.6.1a Types of Non-Paper MSS

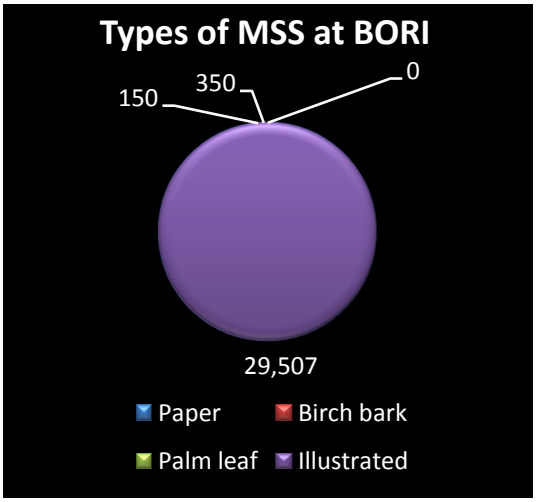


Fig 5.1.6.1b: Types of MSS at BORI

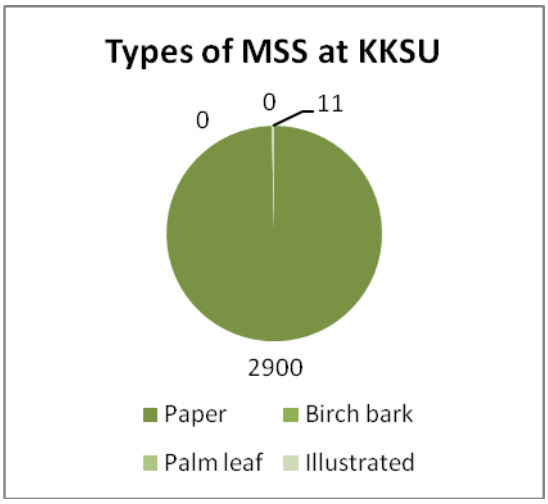


Fig 5.1.6.1c: MSS at KKSU

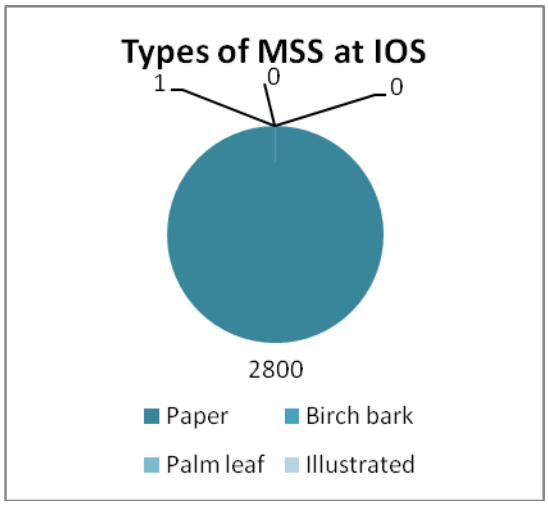


Fig 5.1.6.1d: Types of MSS at IOS

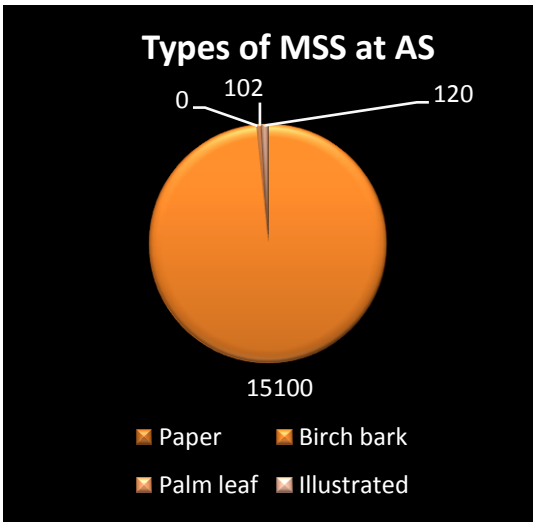


Fig 5.1.6.1e: MSS at AS

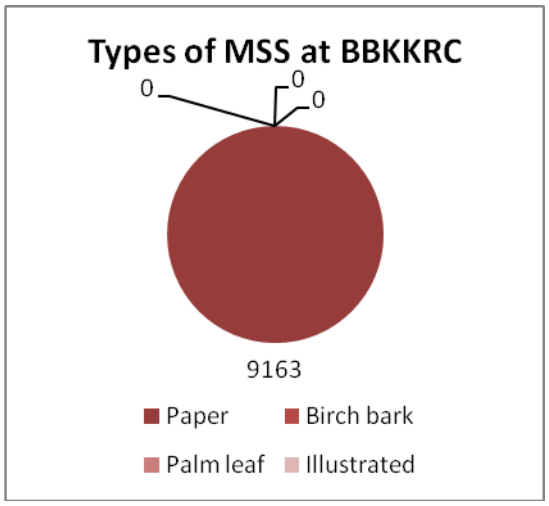


Fig 5.1.6.1f: MSS at BBKKRC

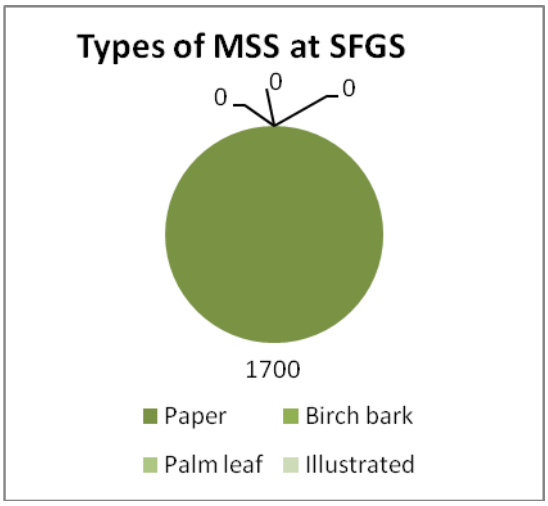


Fig 5.1.6.1g: :MSS at SFGS

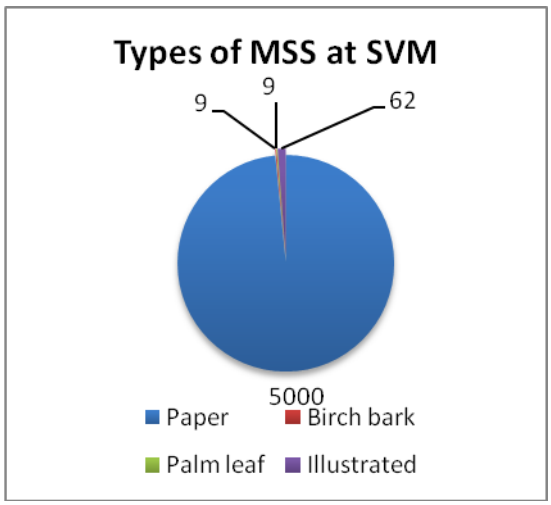


Fig 5.1.6.1h: Types of MSS at SVM

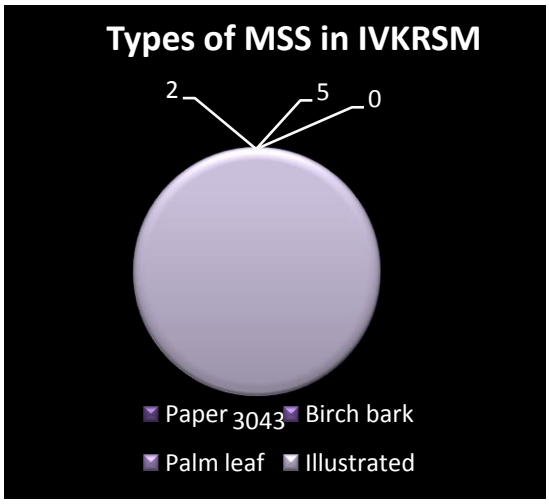


Fig 5.1.6.1i: MSS at IVKRSM

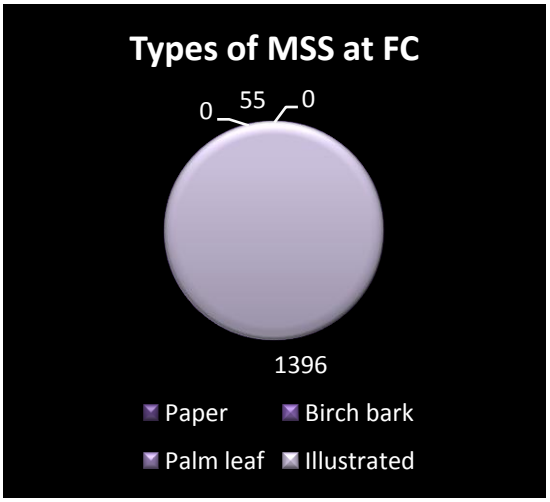


Fig 5.1.6.1j: Types of MSS at FC

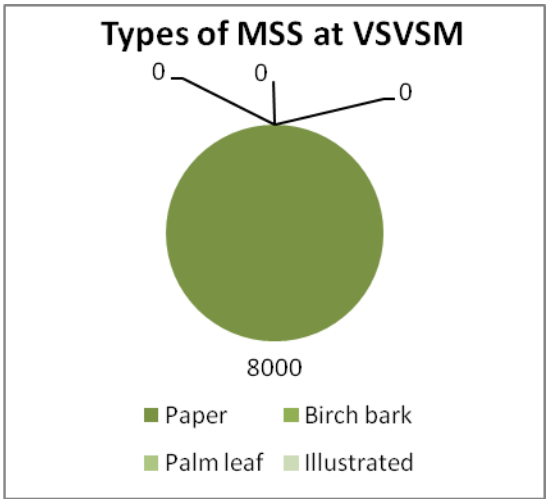


Fig 5.1.6.1k: MSS at VSVSM

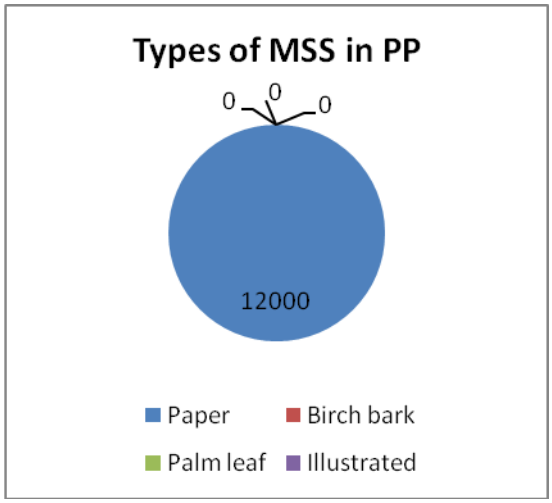


Fig 5.1.6.1l: MSS at BBKKRC

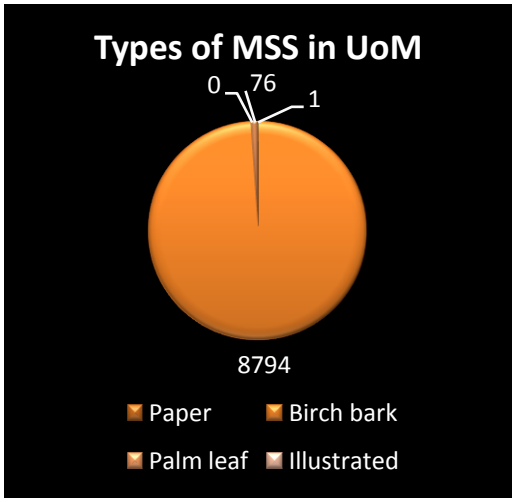
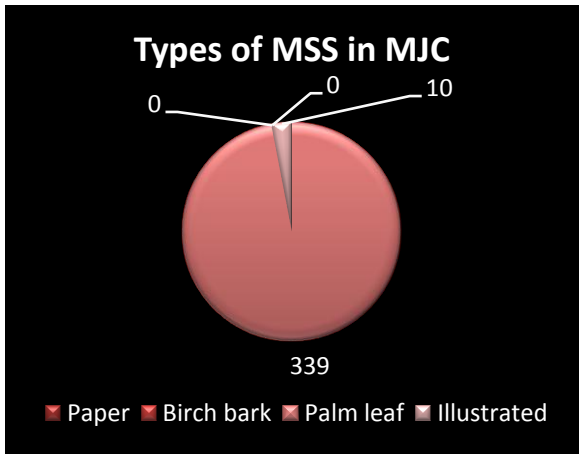


Fig 5.1.6.1m: MSS at UoM



5.1.6.1n: Types of MSS at MJC

Institute	Subjects
UoM	15
SFGS	11
AS	34
BORI	26
PP	22
IVKRSM	14
FC	9
SVM	14
MJC	17
IOS	29
BBKKRC	11
KKSU	19
VSVSM	8

Table 5.1.6.2: Variety in Subjects

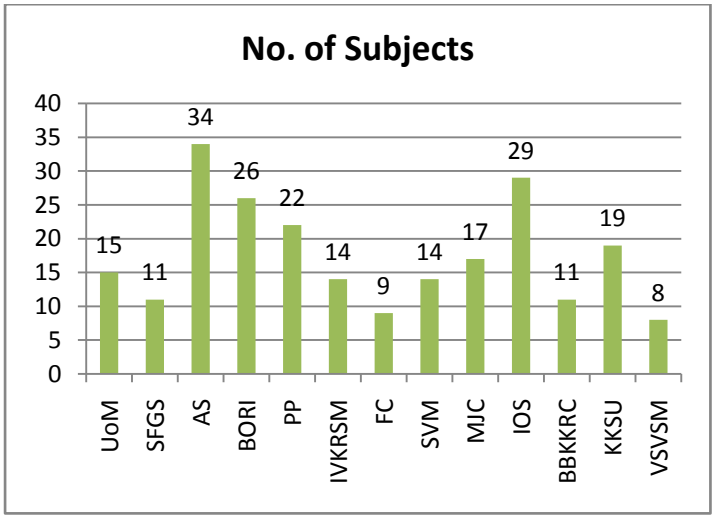


Fig 5.1.6.2 No of Variety in Subjects of MSS

Institutes	Rare Books	Other
UoM	14189	50000
SFGS	3000	30000
AS	10000	
BORI	2500	1500
PP	DNA	DNA
IVKRSM	31407	
FC	15000	
SVM	55000	25000
MJC	76	300
IOS	200	45000
BBKKRC	50000	
KKSU	658	
VSVSM	1000	

Table 5.1.6.3: Rare books & other Collection

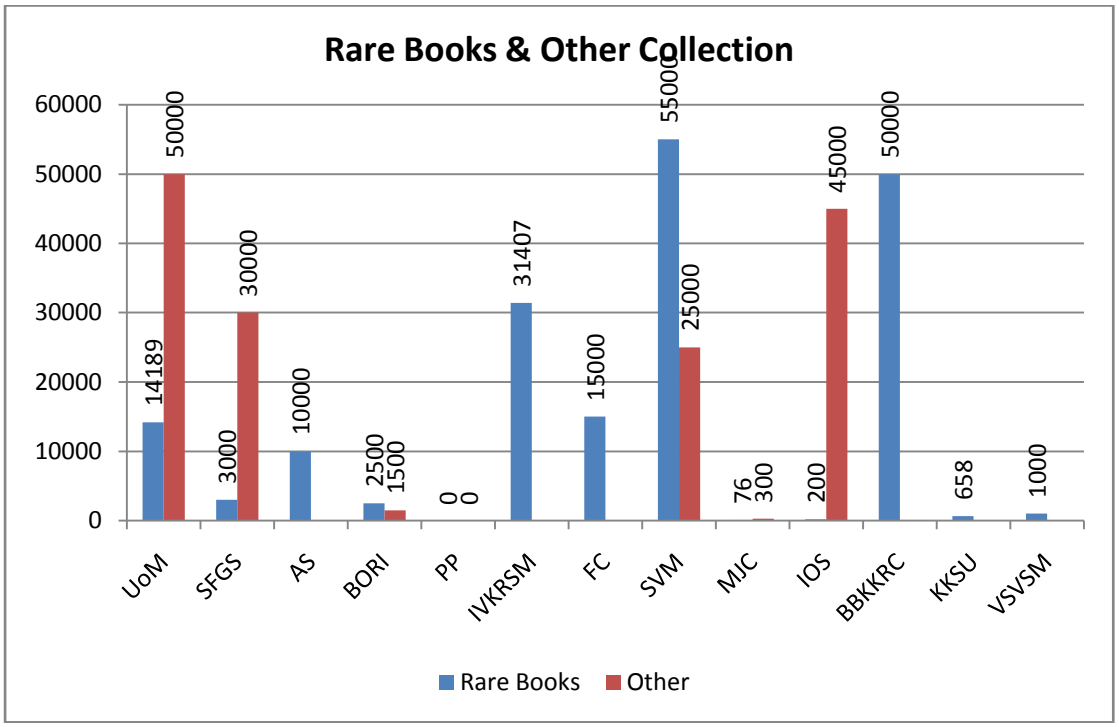


Fig 5.1.6.3: Rare books & other Collection

Institute	No. of Languages	No. of Scripts	Written Collection Development Policy
UoM	5	5	No
SFGS	5	4	No
AS	7	5	No
BORI	5	10	No
PP	1	1	No
IVKRM	9	8	No
FC	1	1	No
SVM	11	2	No
MJC	4	2	✓
IOS	2	4	No
BBKKC	2	2	No
KKSU	3	2	✓
VSVSM	3	3	No

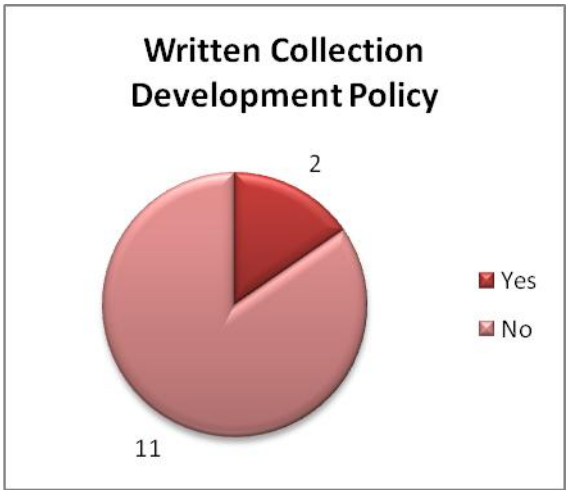


Fig 5.1.6.4: Written Collection Development Policy

Table 5.1.6.4: Languages, Scripts and Written Collection Development Policies

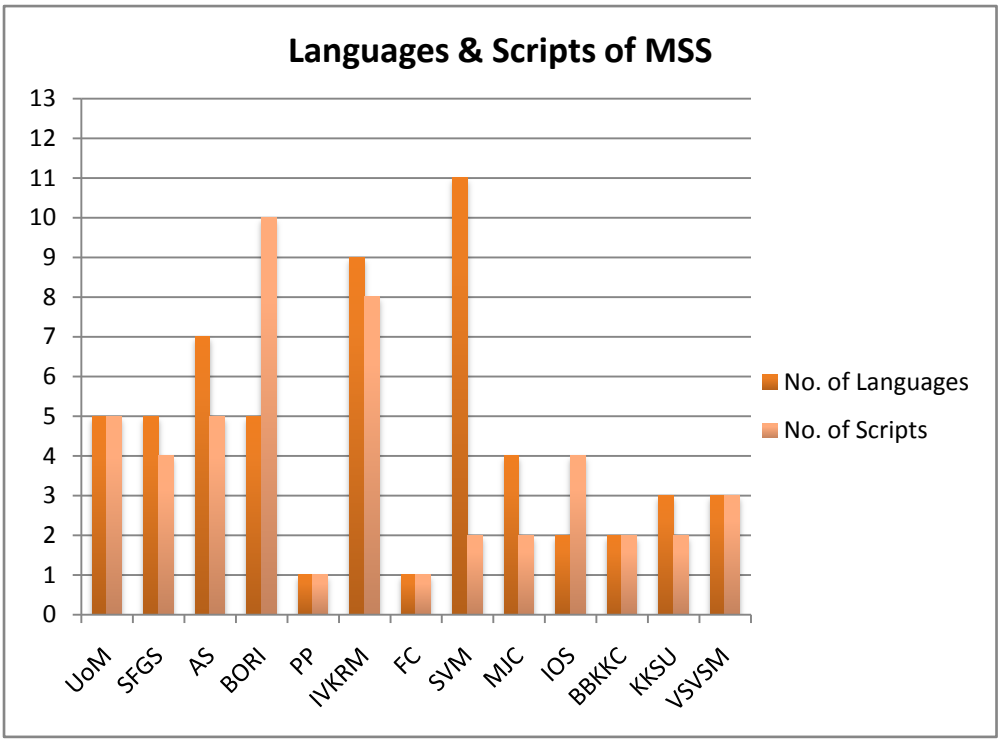


Fig 5.1.6.4a: Languages and Scripts of MSS

KKSU		
S. No.	**Period**	**No. of MSS**
1.	Before 1300 A.D.	401
2.	1301A.D - 1600 A.D	300
3.	1601.A.D - 1900 A.D	245
4.	190l.A.D - 1947A.D.	2000
5.	Dates unknown	54

Table 5.1.6.5: Period wise MSS

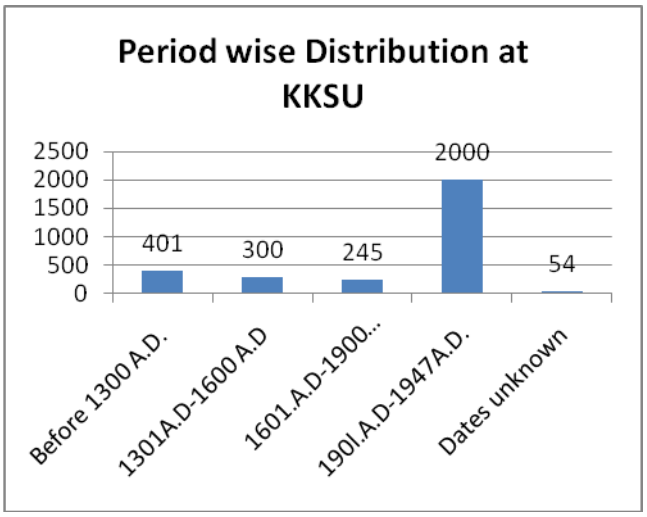


Fig 5.1.6.5: Period wise MSS at KKSU

IOS		
S. No.	**Period**	**No. of MSS**
1.	Before 1300 A.D.	1
2.	1301A.D-1600 A.D	3
3.	1601.A.D-1900 A.D	626
4.	190l.A.D-1947A.D.	35
5.	Dates unknown	1109

Table 5.1.6.6: Period wise MSS

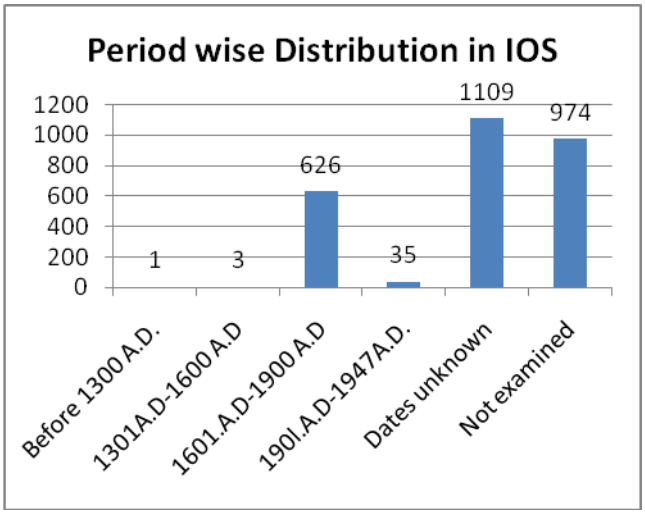


Fig 5.1.6.6: Period wise MSS at IOS

VSVSM		
S. No.	**Period**	**No. of MSS**
1.	Before 1300 A.D.	0
2.	1301A.D-1600 A.D	0
3.	1601.A.D-1900 A.D	8000
4.	190l.A.D-1947A.D.	0
5.	Dates unknown	0

Table 5.1.6.7: Period wise MSS

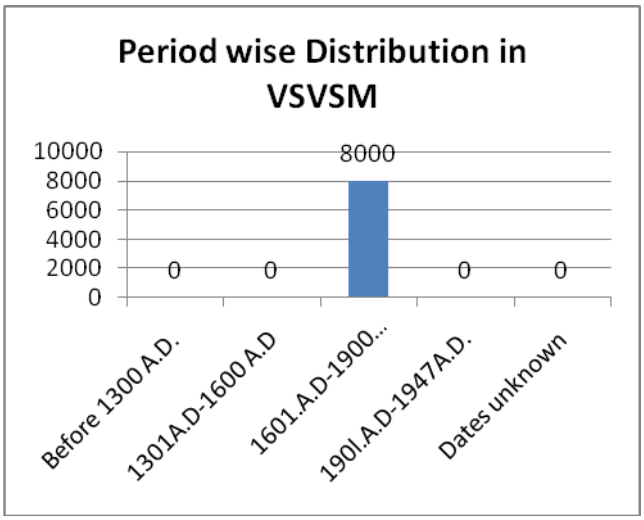


Fig 5.1.6.7 Period wise MSS at VSVSM

SFGS		
S. No.	**Period**	**No. of MSS**
1.	Before 1300 A.D.	0
2.	1301A.D-1600 A.D	0
3.	1601.A.D-1900 A.D	8000
4.	190l.A.D-1947A.D.	0
5.	Dates unknown	0

Table 5.1.6.8 Period wise MSS

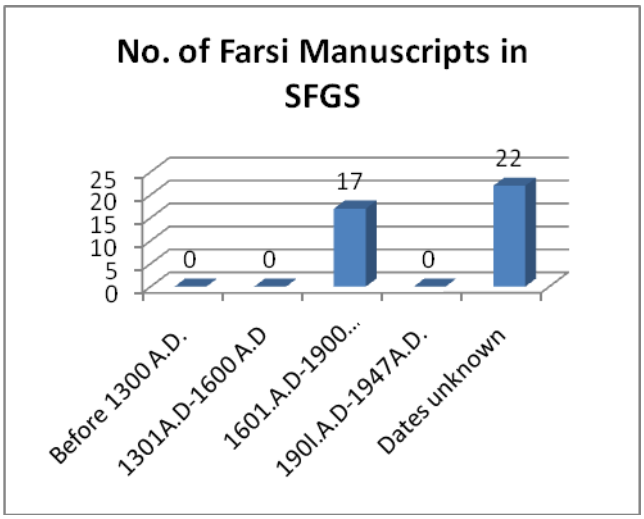


Fig 5.1.6.8: Period wise MSS at SFGS

Institute	**Complete**	**Incomplete**
UoM	NA	NA
SFGS	NA	NA
AS	10000	5000
BORI	NA	NA
PP	10200	1800
IVKRSM	732	226
FC	NA	NA
SVM	NA	NA
MJC	NA	NA
IOS	NA	NA
BBKKRC	NA	NA
KKSU	1777	416
VSVSM	2000	6000

Table 5.1.6.9: Completeness of MSS

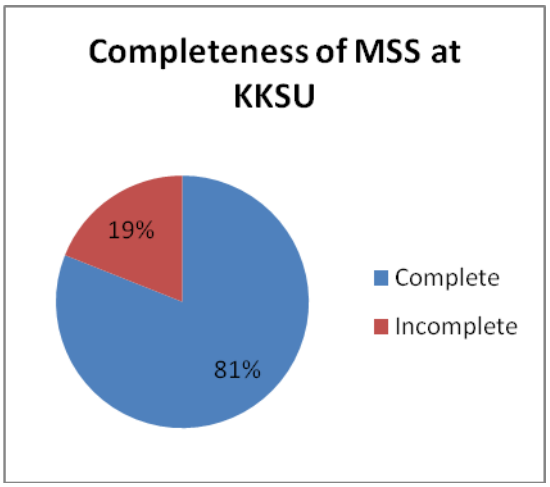


Fig 5.1. 6.9: Completeness of MSS at KKSU

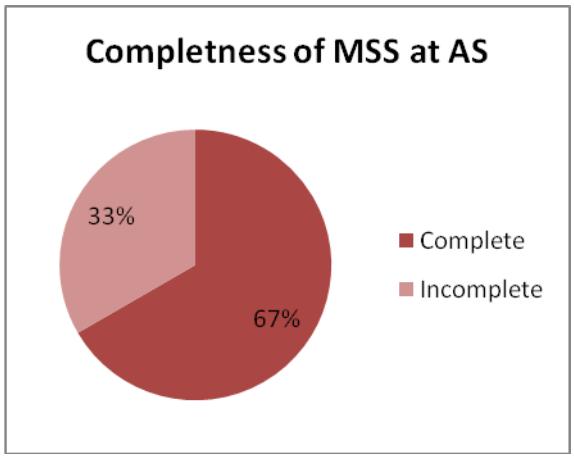


Fig 5.1.6.9a: Completeness of MSS at AS

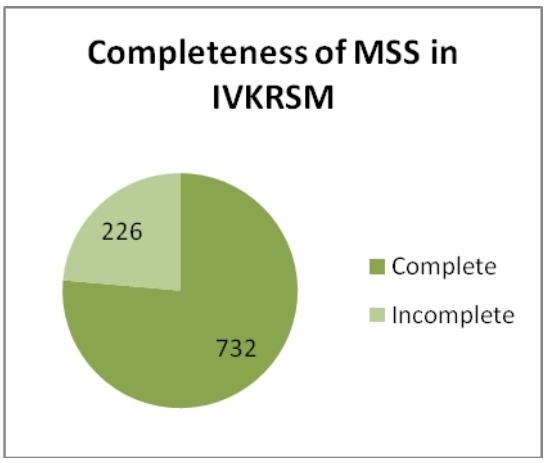
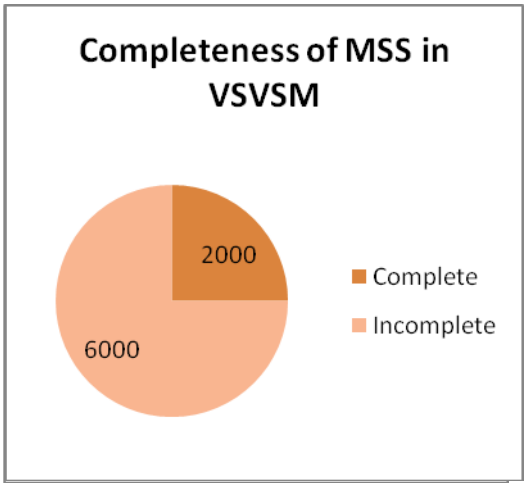


Fig 5.1.6.9b: Completeness of MSS



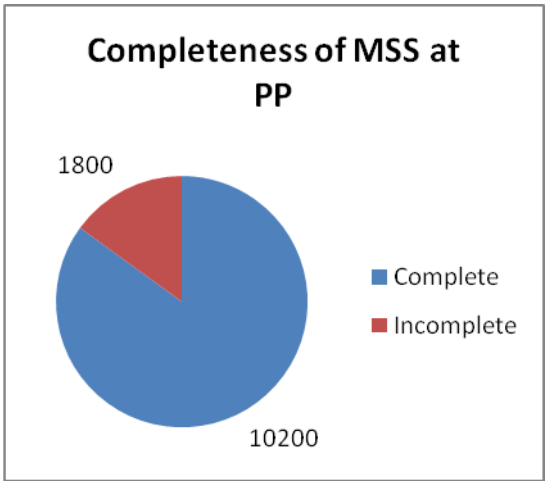


Fig 5.1.6.9c: Completeness of MSS at VSVSM Fig 5.1.6.9d: Completeness of MSS at PP

Interpretation and Hypothesis Validation: It is observed though every partner center claims some particular figure as the total number of their collection, a close inspection in almost every case revealed disparity in numbers. The figures are reported differently by the same centers at different places and it is a fact that most of the MSS custodian centers do not have exact number of their MSS collection. The data analyzed above clearly shows that the primary collection in all the NMM partner centers is of paper MSS. The number of paper MSS possessed by the partner centers vary widely with MJC having least number of MSS (339) and BORI having the highest number (30000). Other centers have MSS between 3000 to 12000 numbers. Apart from paper MSS, almost all the centers (12 out of 13 – 92.30%) have rare books and other antic collections. On an average about 20% MSS bundles in the collection of various centers are found to be incomplete. Subject wise on an average each partner center has about 17 subject heads under which their MSS collection is classified. Most of the MSS primarily belong to the period 1601 AD to 1900AD. Sanskrit and Marathi are the predominant languages with Farsi MSS also found in many partner centers. Devanagari, Modi are the most common scripts found in the MSS. Only 2 of the 13 centers (15.38%) claim to have a written collection development policy. **Thus the sixth hypothesis 'various partner centers of NMM in Maharashtra do not differ significantly in the type of their manuscript collections' gets validated.**

5.1.7 Analysis of Data Collected about Arrangement Preservation Procedures Policies and Maintenance

The storage and display facilities and their adequacy, milieu for safety and preservation of MSS are critical for proper safe keep of manuscript collection. The collected data in respect of such facilities is analyzed after tabulating.

Institute	Mobile Compact Storage	Steel Almirah	Wooden Almirah	Showcase	Adequacy
UoM		8	7	✓	✓
SFGS		9	3		✓
AS		20	0		✓
BORI		DNA	DNA	✓	✓
PP		DNA	DNA		✓
IVKRSM		40	0		✓
FC		9	0	✓	✓
SVM		31	2	✓	
MJC		0	4		✓
IOS		10	0		✓
BBKKRC	10	0		✓	✓
KKSU	2	0	0		✓
VSVSM		50		✓	✓
Yes				6	12
No				7	1

Table 5.1.7.1: Types of Storage and Display in Various MSS Centers

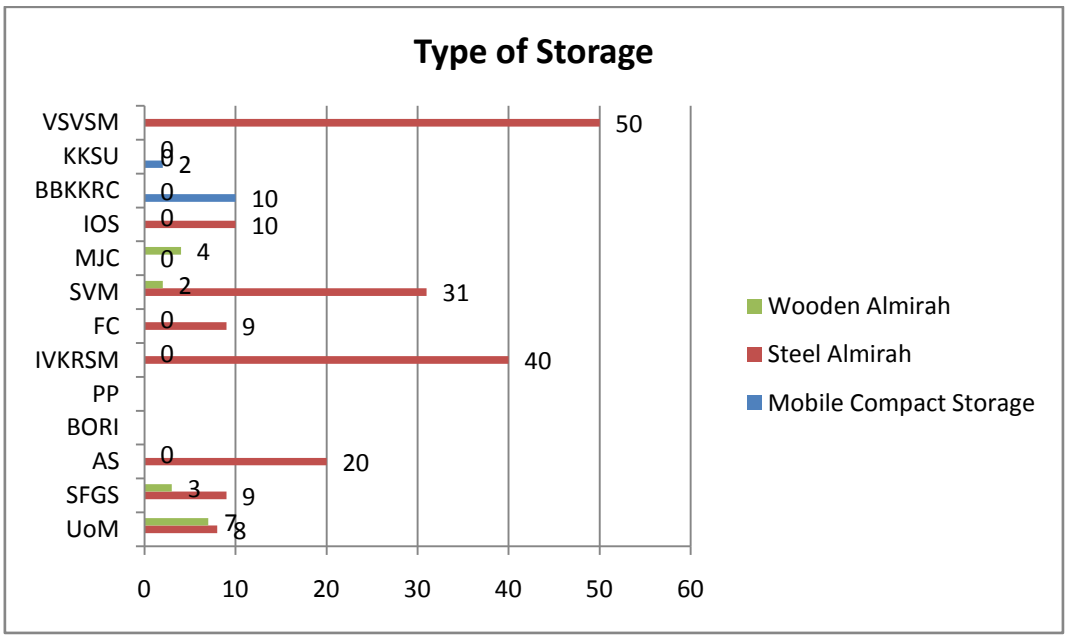


Fig 5.1.7.1 Types of Storage in Various MSS Centers

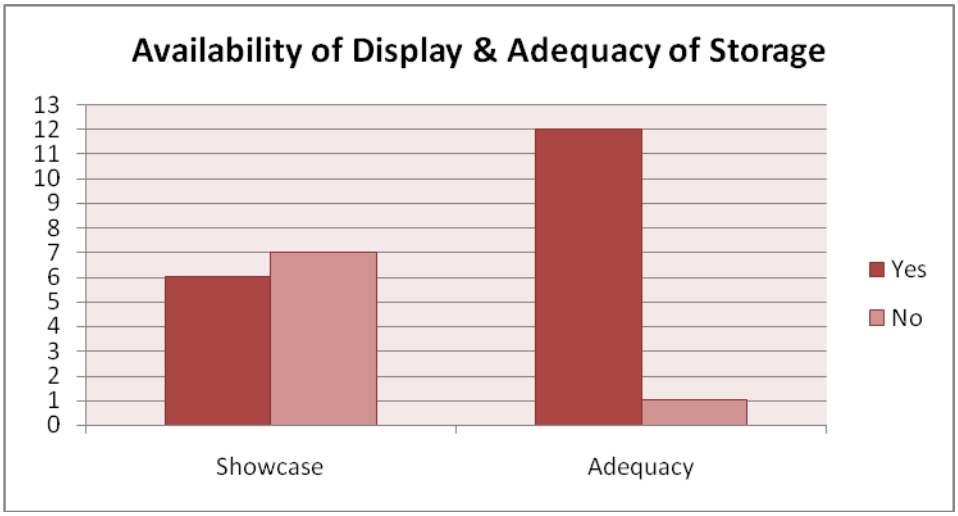


Fig 5.1.7.1a: Showcases and Adequacy of Storage

Type	Temperature control	Humidity control	Fumigation chamber	Fire Extinguisher	Smoke Alarm	CC TV cams	Thermometer	Hygrometer	pH Strips
UoM	✓	No	✓	✓	No	✓	No	No	No
SFGS	No	No	✓	✓	No	No	No	No	No
AS	No	No	No	✓	No	✓	No	No	No
BORI	✓	No	✓	✓	No	✓	✓	No	✓
PP	No	No	No	✓	No	No	No	No	No
IVK RSM	No	No	No	✓	No	✓	✓	No	No
FC	No	No	✓	✓	✓	✓	✓	✓	✓
SVM	No	No	No	✓	No	✓	No	No	No
MJC	No	No	✓	✓	No	✓	No	No	✓
IOS	No	No	No	No	No	✓	No	No	No
BBK KRC	No	No	✓	✓	No	✓	No	No	No
KKSU	No	No	No	✓	No	✓	No	No	No
VSVSM	No	No	No	✓	No	✓	No	No	No

Table 5.1.7.2: Milieu for Safety and Preservation of Manuscripts

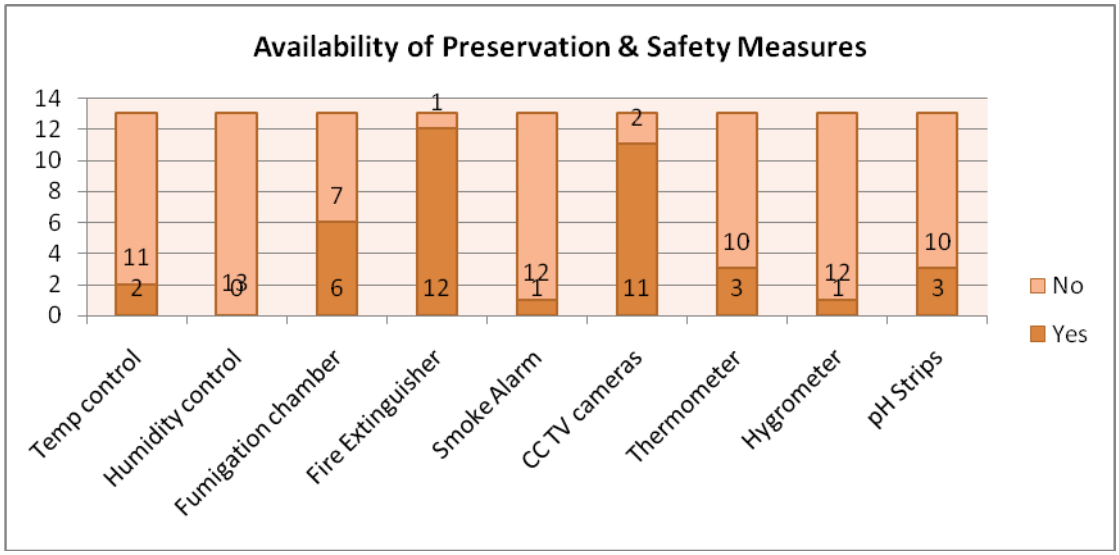


Fig 5.1.7.2: Availability of Preservation and Safety Measures

Data Interpretation and Hypothesis Validation: 8 centers (61.53%) use steel almirahs for storing their MSS and 4 centers (30.76%) use wooden almirahs. 2 (15.38%) other centers are using mobile compact storage system for stacking their MSS collection. 6 centers (46.15%) have showcases to exhibit their MSS collection. 12 out of 13 centers (92.30%) claim adequacy of storage facilities. Hence the first part of the hypothesis that 'various partner centers of NMM in Maharashtra have adequate storage facilities' is fully validated. As regards to equipment and conditions for maintenance of MSS in good conditions, only 2 centers (15.38%) have Air conditioning to control the room temperature and none have humidity control mechanisms in place. 6 centers (46.15%) have fumigation chambers and 12 (92.30%) have fire extinguishers installed. Except for one center (FC) none have smoke alarms. While 11 centers (84.61%) have CCTV cameras set up, only 3 centers (23.07%) have thermometers to measure daily temperature variations and 3 centers (23.07%) use pH strips to check acidity of MSS. Only 1 center (7.69%) has hygrometer installed. Hence the second part of the hypothesis that 'various partner centers of NMM in Maharashtra have adequate equipment and conditions for maintenance of manuscripts in good condition' is only partially validated. Thus the above hypothesis 'Various partner centers of NMM in Maharashtra have adequate storage facilities, equipment and conditions for maintenance of manuscripts in good condition' is only partially validated.

5.1.8 Analysis of Data Pertaining to Curative and Preventive Conservation of MSS Carried out by Various Partner Centers since their Inception

Preventive and curative conservation procedures are important for extending the life of manuscripts. While curative conservation requires laboratory facilities, equipment and expertise, preventive conservation procedures can be carried out with minimal technical expertise. Data regarding the conservation carried out by the NMM partner centers has been gathered and tabulated.

Institute	UoM	SFGS	AS	BORI	PP	IVKRSM	FC	SVM	MJC	IOS	BBKKRC	KKSU	VSVSM
No. of MSS conserved till date	8844	0	0	1264	0	0	1451	0	561	0	9163	0	0
Curative	0	0	0	47	0	0	0	0	169	0	0	0	0
Preventive	8844	0	0	1217	0	0	1451	0	392	0	9163	0	0

Table 5.1.8.1: Number of MSS Conserved till Date

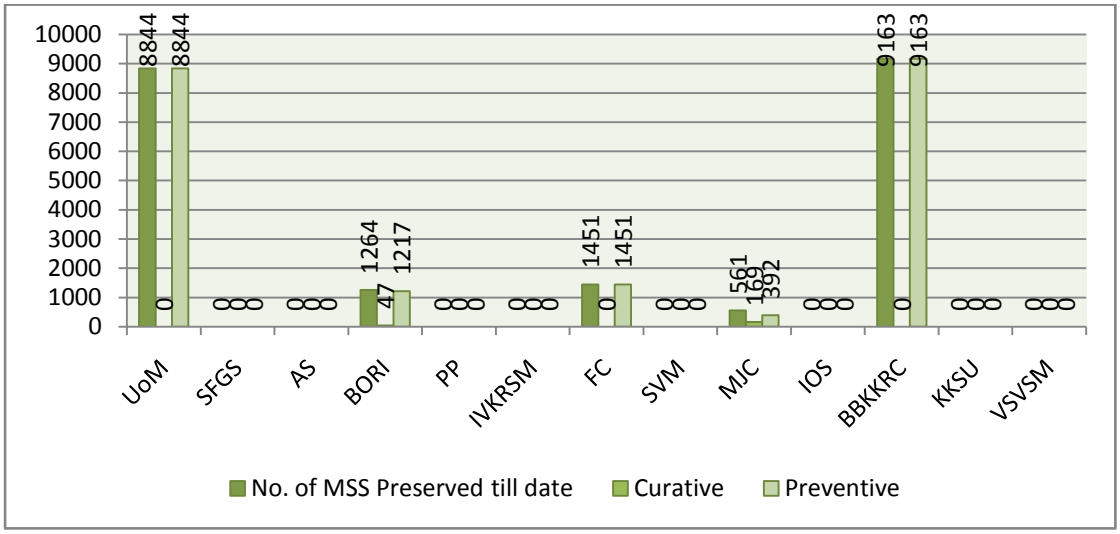


Fig 5.1.8.1**:** Number of MSS Conserved Till Date

M.J College				Deccan College			
Preventive Conservation		**Curative Conservation**		**Preventive Conservation**		**Curative Conservation**	
No. of Bundles	No. of Folios	No. of Bundles	No. of Folios	No. of Bundles	No. of Folios	No. of Bundles	No. of Folios
339	11235	119	3312	53	4523	50	4276

Table 5.1.8.2: Preventive and Curative Conservation Carried out at MJC and DC

Conservation Activity at BORI: No of Folios conserved till date								
Year	2017-18	2016-17	2015-16	2014-15	2013-14	2012-13	2011-12	Total
Preventive	48490	178687	0	50768	1859	0	35090	314894
Curative	1195	6963	0	2179	871	0	172	11380

Table 5.1.8.3: No. of Folios Conserved by BORI

Institute	Main Reason for Deterioration of MSS
UoM	Condition is reasonably good. Oldness of manuscript, environmental factors.
SFGS	Acidity (Brittleness), Environmental Factor
AS	Aging and Environmental factors.
BORI	Aging and Environmental Factors
PP	Aging and Environmental Factor
IVKRSM	Insects, Environmental factors
FC	Acidity (Brittleness)
SVM	Good Condition, Annual Pest Controlling by PVT. Companies
MJC	Aging and environmental factors
IOS	Aging
BBKKRC	Humidity
KKSU	Aging. Condition is generally good.
VSVSM	Acidic nature of paper

Table 5.1.8.4: Main Reasons for Deterioration

Institute	Condition		
	Good	Average	Poor
UoM	✓		
SFGS			✓
AS		✓	
BORI	✓		
PP	✓		
IVKRSM	✓		
FC	✓		
SVM	✓		
MJC		✓	
IOS	✓		
BBKKRC	✓		
KKSU	✓		
VSVSM	✓		✓

Table 5.1.8.5: Condition of MSS

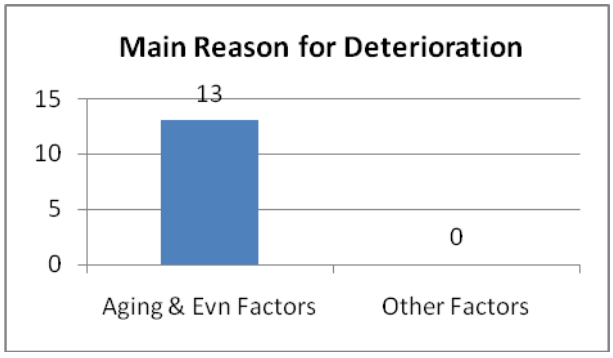


Fig.5.1.8.2: Main Reason for Deterioration

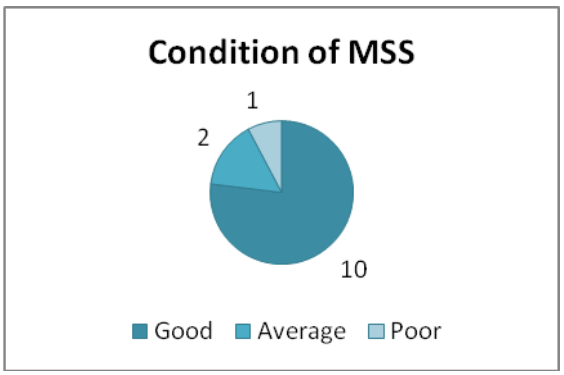


Fig 5.1.8.3: Condition of MSS

Institutes	Traditional Method	Modern Method	Cloth wrapping	Acid free Boxes	Solander Boxes
UoM	✓	No	✓	✓	No
SFGS	No	No	✓	No	No
AS	✓	No	✓	No	No
BORI	✓	✓	✓	✓	No
PP	✓	No	✓	No	No
IVKRSM	No	✓	✓	No	No
FC	No	✓	✓	No	No
SVM	✓	No	✓	No	No
MJC	No	✓	No	✓	No
IOS	✓	✓	✓	No	No
BBKKRC	No	✓	✓	No	No
KKSU	No	No	✓	No	No
VSVSM	✓	No	✓	No	No
	7	6	12	3	0

Table 5.1.8.6: Conservation Methods Employed

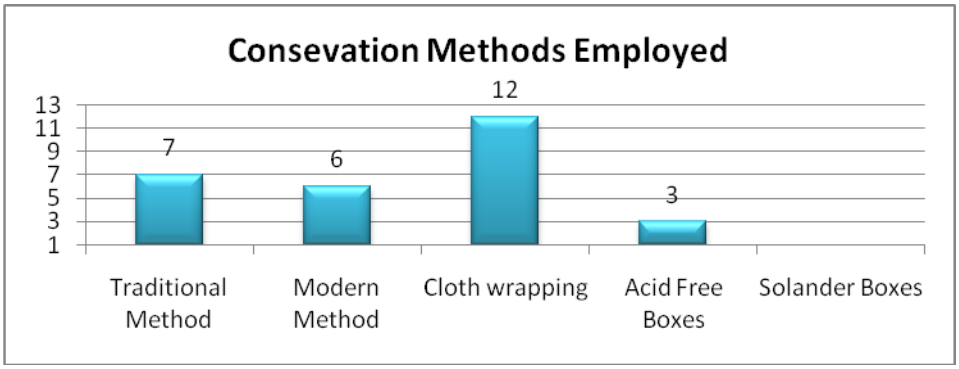


Fig 5.1.8.4: Conservation Methods Employed

Traditional Methods	**Vekhand Powder**	**Dry Neem Leaves**	**Dry Tobacco Leaves**	**Black Pepper, Powdered Calamus, Turmeric, etc.**
UoM	No	✓	No	No
SFGS	No	No	No	No
AS	✓	No	No	✓
BORI	✓	✓	No	✓
PP	✓	No	No	No
IVKRSM	No	No	No	No
FC	No	No	No	No
SVM	✓	No	No	No

MJC	No	No	No	No
IOS	✓	No	No	No
BBKKRC	No	No	No	No
KKSU	No	No	No	No
VSVSM	✓	No	✓	No

Table 5.1.8.7: Traditional Methods Used for Conservation of MSS

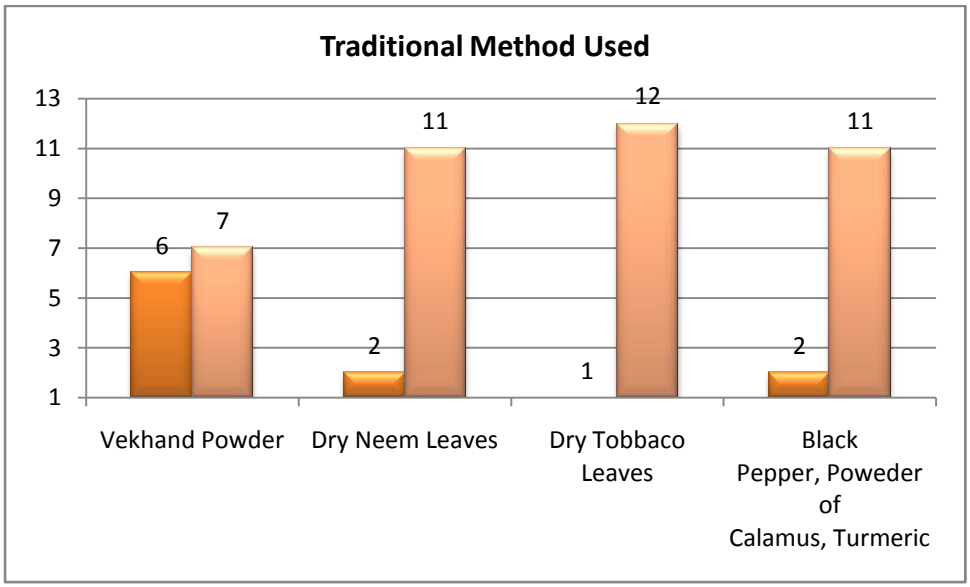


Fig 5.1.8.5: Traditional Methods Used for Conservation of MSS

Institute	Fumigation Chamber	Naphthalene Balls	Sprinkling of Pesticides	Chemical Treatment
UoM	No	No	No	No
SFGS	No	No	No	No
AS	No	No	No	No
BORI	✓	No	No	✓
PP	No	No	No	No
IVKRSM	No	No	✓	✓
FC	✓	✓	No	No
SVM	No	No	No	No
MJC	✓	✓	No	✓
IOS	✓	No	No	No
BBKKRC	✓	No	No	✓
KKSU	No	No	No	No
VSVSM	No	No	No	No

Table 5.1.8.8: Modern Methods of Conservation Employed

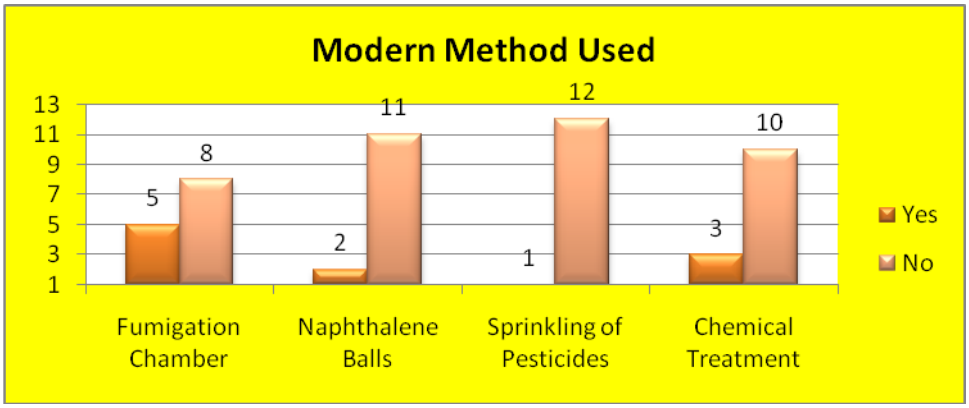


Fig 5.1.8.6: Modern Methods of Conservation Employed

Data Interpretation and Hypothesis Validation: In Maharashtra, conservation of MSS is carried out at two centers viz., BORI and MJC. The MJC has carried out conservation both at MJC and DC. Till date, 11235 and 3312 folios have been subjected to preventive conservation at MJC and DC respectively and 4523 and 4276 folios have been curative conserved by the conservation staff of MJC. BORI has carried out preventive and curative conservation of 314894 and 11380 folios respectively. Of the thirteen centers, ten centers (76.92%) report their MSS collection to be reasonably in good condition. Two centers (15.38%) consider their collection to be average (AS & MJC) in condition and only one (SFGS) center (7.69%) reports their collection to be in bad condition. All the centers (100%) identify aging and environmental factors are the main reason for the deterioration of their MSS collection. Seven centers (53.84%) use one or other form of traditional methods of conservation and six centers (46.15%) employ modern methods such as sprinkling of pesticides, use of fumigation chamber and use of naphthalene balls. Five centers (38.46%) have fumigation chambers which are sparingly used. Barring BORI, BBKKRC and MJC (23.07%), none of the centers have neither the wherewithal nor the expertise in employing the modern methods of conservation of MSS using chemicals. 12 out of 13 centers (92.30%) wrap their MSS with red/yellow/white cloth to prevent exposure to dust and insects. Of the thirteen custodian centers, only five centers (38.46%) namely, BORI, BBKKRC, FC, UoM and MJC have been practicing conservative practices in their respective centers. Rest of the centers are limited only to the extent of taking pest control measures only. Hence the hypothesis that 'various partner centers of NMM in Maharashtra have been able to preserve substantial number of manuscripts since their inception' stands invalidated.

5.1.9 Analysis of Data in Respect of Organization of MSS in Various Partner Centers.

Institute	Accession wise	Collection wise
UoM	No	✓
SFGS	✓	No
AS	✓	No
BORI	✓	No
PP	✓	No
IVKRSM	✓	No
FC	✓	No
SVM	✓	No
MJC	No	✓
IOS	✓	No
BBKKRC	No	✓
KKSU	✓	No
VSVSM	✓	No
Yes	10	3

Table 5.1.9.1: Ordering the Collection

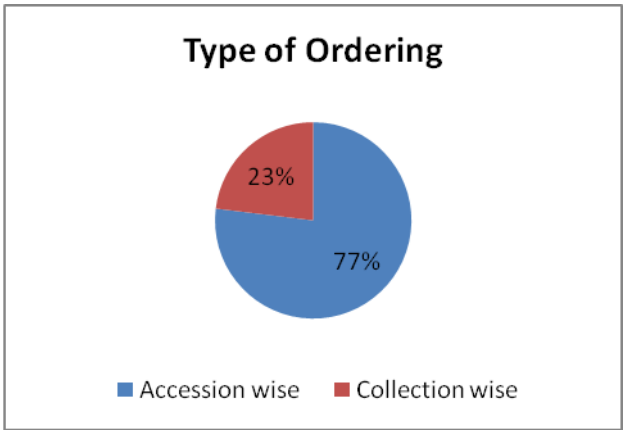


Fig 5.1.9.1: Type of Ordering

Institute	Accessioning	Classification	Cataloguing
UoM	✓	No	✓
SFGS	No	No	✓
AS	✓	No	✓
BORI	✓	No	✓
PP	✓	No	✓
IVKRSM	✓	No	✓
FC	✓	No	✓
SVM	✓	No	✓
MJC	✓	No	✓
IOS	✓	No	✓
BBKKRC	No	No	✓
KKSU	✓	No	✓
VSVSM	✓	No	No
Yes	11	0	12

Table 5.1.9.2: Technical Procedures carried out on the MSS

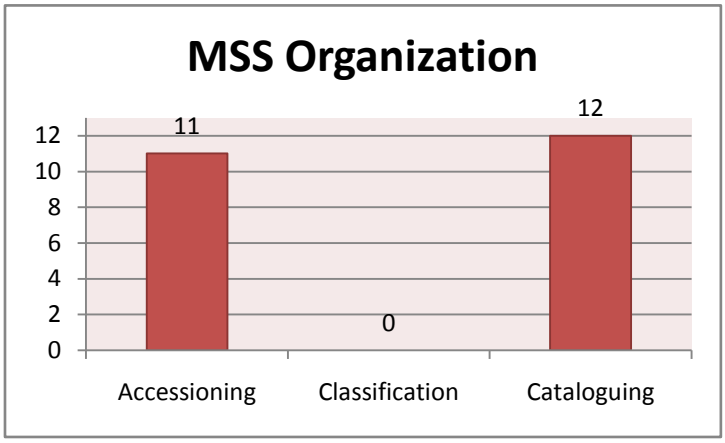


Fig 5.1.9.2: Technical Procedures carried out on the MSS

Institute	Book	Card	OPAC	Printed	Computerized List
UoM	✓				
SFGS					✓
AS	✓				
BORI	✓				
PP	✓			✓	
IVKRSM	✓				
FC					
SVM	✓				
MJC			✓		✓
IOS			✓		
BBKKRC	✓				
KKSU		✓		✓	✓
VSVSM	✓				
Yes	**8**	**1**	**2**	**2**	**3**

Table 5.1.9.3: Types of Catalogues Maintained by MSS Centers

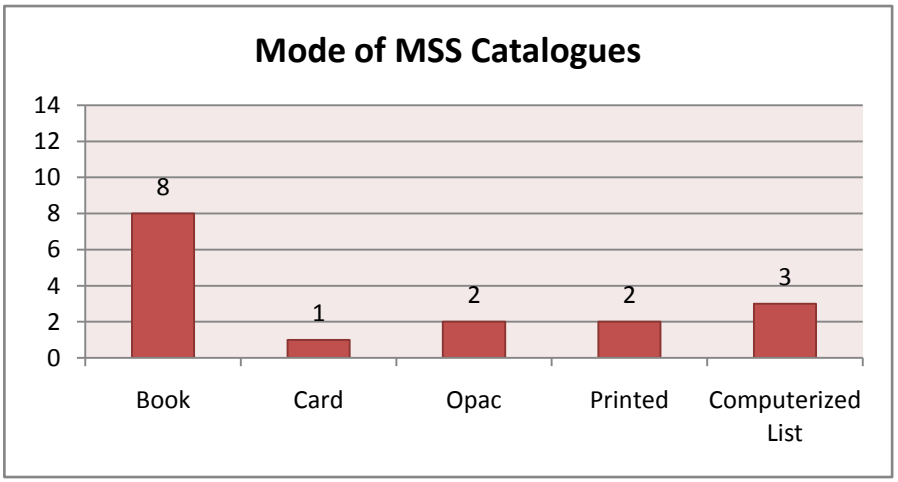


Fig 5.1.9.3: Types of Catalogues Maintained by MSS Centers

Data Interpretation and Hypothesis Validation: Data have been collected in respect of organization of MSS in various partner centers such as accessioning, classification and cataloguing practices, publication of catalogues in various formats. These technical procedures are very important for proper organization of MSS and help in easy retrieval while servicing the researchers. The data collected is tabulated and analyzed. Of the 13 centers, 10 centers (76.92%) organize their collection as per the accession number and rest 3 centers (23.07%) organize their MSS as per the name of the collection (donor's name). Even within such collection based organization, accession numbers are used to sub-organize the MSS within the collection. 11 centers (84.61%) have accessioned their catalogues but two centers (SFGS & VSVSM) have not accessioned their collection. None of the centers have made use of any library classification system such as DDC, UDC or CC. 12 Centers (92.30%) have catalogued their MSS. 8 centers (61.53%) have prepared book catalogues and only 2 centers (15.38%) have made use of OPAC to provide access to computerized catalogue of their collection. 3 centers (23.07%) have prepared softcopies (Excel sheets/pdf files) of their collection. **The above analysis of data clearly validates the ninth hypothesis that 'various partner centers of NMM in Maharashtra have definite system of organization of their manuscript collection'.**

5.1.10 Analysis of Data in Respect of Publication of Descriptive Catalogues and Books based on the MSS Collections by Various Partner Centers.

Institutes Types	Catalogue published?	No. of volumes	Book published?	No. of Books
UoM	✓	2	No*	0
SFGS	✓	5	✓	41
AS	No	0	✓	146
BORI	✓	13	✓	5
PP	✓	2	✓	26
IVKRSM	✓	1	✓	80
FC	✓	1	No	0
SVM	✓	4	✓	165
MJC	No	0	No	0
IOS	No	0	No	0
BBKKRC	✓	1	✓	6
KKSU	No	0	No	0
VSVSM	No	0	✓	1
Yes	8	0	8	0

Table 5.1.10.1: Publication of Catalogues and Books

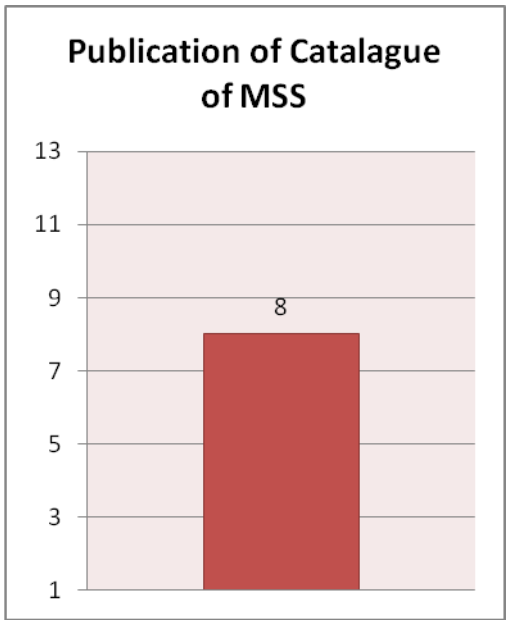


Fig 5.1.10.1: Catalogue Publication

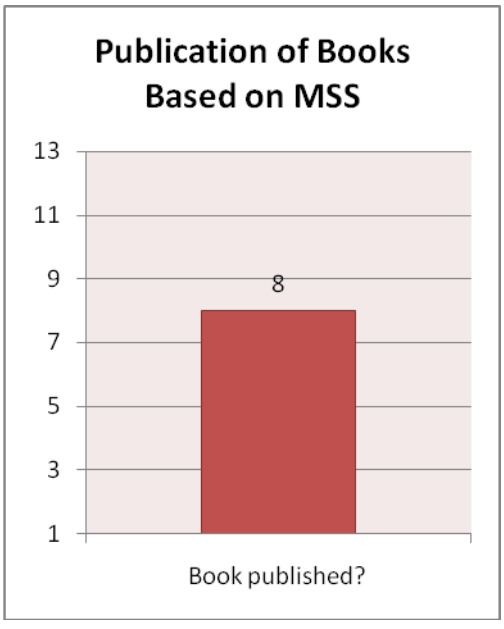


Fig 5.1.10.1a: Book Publication

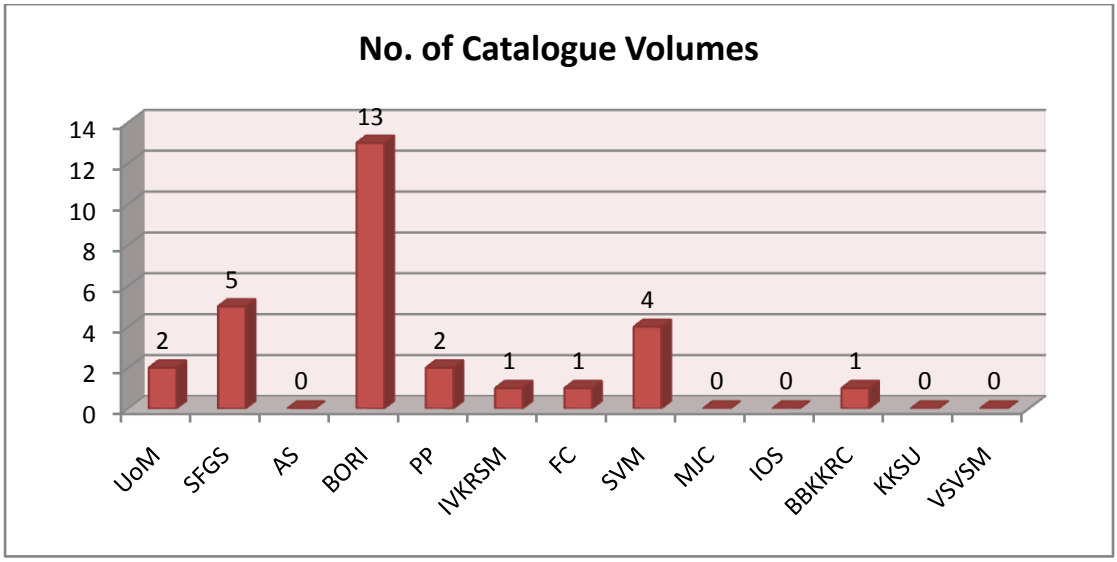


Fig 5.1.10.1b: Number of Catalogue Volumes Published

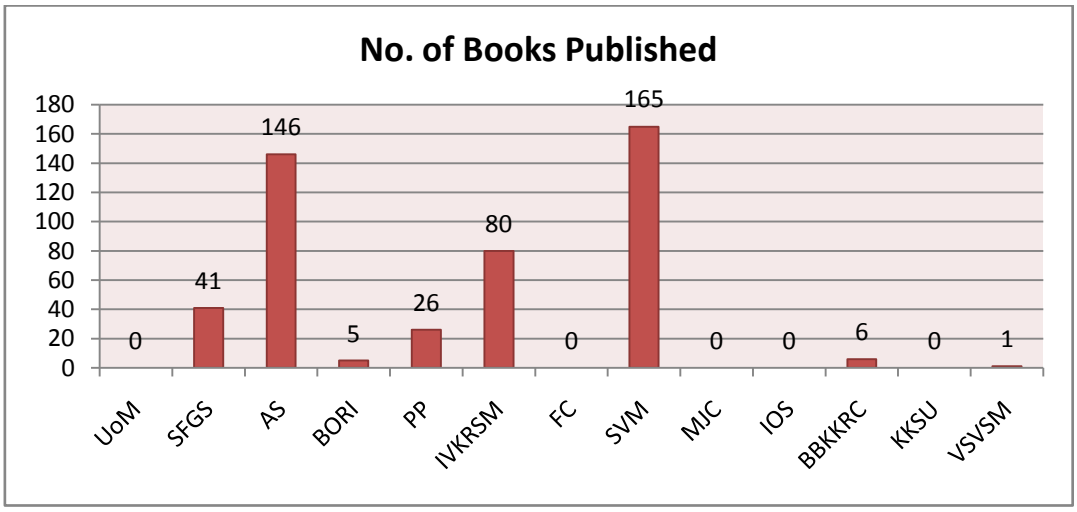


Fig 5.1.10.1c: Number of Books Published

Data Interpretation and Hypothesis Validation: It is evident from the above data analysis that eight out of thirteen custodian institutions (61.53%) have published both descriptive catalogues and books based on their manuscript collection. This is a very welcome sign as the contents of the manuscripts are being brought to the lime light. While BORI is the frontrunner in the publication of descriptive catalogues with 13 volumes, SVM with 165 and AS with 146 books stand tall in the publication of books based on their manuscript collection. In all 29 catalogues and 470 books were brought out by the custodian centers. Thus, the tenth **Hypothesis 'Various partner centers of NMM in Maharashtra have made use of their manuscript collections for publication of Catalogues and books'** is validated.

5.1.11 Analysis of Data on the Digitization Efforts by Various NMM Partner Centers.

Institute	Digitization Done?	Digitization Year	No. of MSS	No. of Pages	Available on Website / Intranet?
UoM	Yes	2018	100		
SFGS	Yes	2009-12	1200		
AS	Yes	2007-14	14673	1249151	
BORI	Yes	2012-18	7588	1048325	
PP	Yes	2017	12000		
IVKRSM	Yes	2011-13	3050	300000	Yes
FC	Yes	2013-15	1451		Yes
SVM	Yes	2012	3000		
MJC	Yes	2017-19	50		Yes
IOS	No				
BBKKRC	No				
KKSU	Yes	2019	3000		Yes
VSVSM	Yes	2017	8000		
BISM^		2007-14	27302	2111105	

^BISN is not an NMM partner center.

Table 5.1.11.1: Digitization Details (source: NMM Annual Reports)

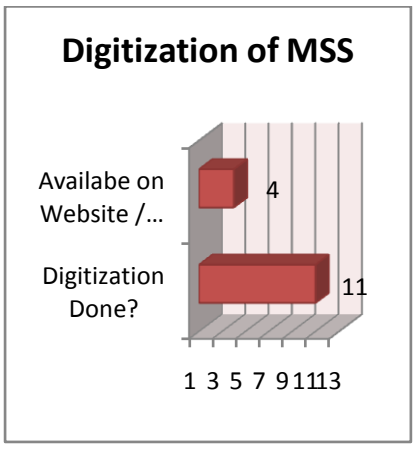


Fig 5.1.11.1: Digitization Details

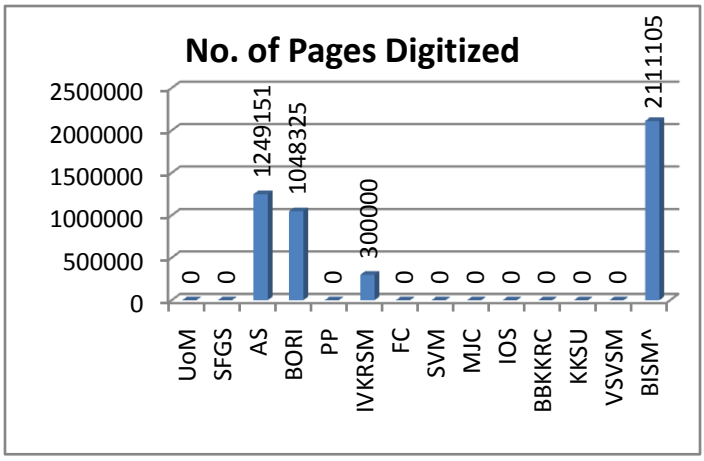


Fig 5.1.11.1a: Digitization Details

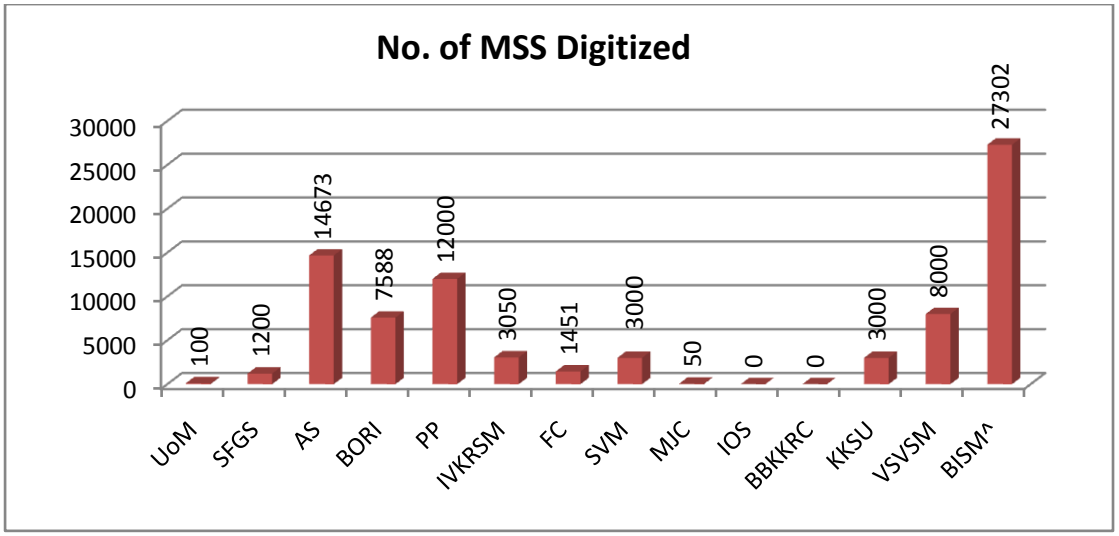


Fig 5.1.11.1b: No. of MSS Digitized

Data Interpretation and Hypothesis Validation: The data collected under part J (Digitization) of the questionnaire, tabulated and analyzed shows in ample measure that eleven out of 13 centers (84.61%) have digitized their manuscript collection either partially or completely. It may be pointed out that BORI has microfilmed its manuscript collection much before the advent of the digital technologies. The case of IVKRSM is an interesting one. Though the manuscript collection of IVKRSM is around 3000, the center has a huge wealth of historical documents of about 3 lakh manuscripts. The Mandal has been able to preserve these documents through digitization. In all, more than 81,400 manuscripts and about 4708500 documents have been digitally preserved by the NMM partner centers. All the MSS of KKSU, AS, FC, VSVSM and PP, about 80% of MSS in respect of SFGS and SVM and less than 50% MSS in respect of UoM, MJC are digitized. It is pertinent to note that digital copies of only 4 out of 11centers have been uploaded either on internet or on intranet. Thus even though the content is digitally preserved, the same is not made accessible to the researchers in many centers. The centers will have to be encouraged and motivated to make the mass content openly available to the researchers in the interest of the common good as knowledge shall not be restricted. With 11 out of 13 centers (84.61%) having digitized their MSS collection partially or fully, **the eleventh hypothesis that 'Various partner centers of NMM in Maharashtra have successfully digitized their manuscript collection' stands validated.**

5.1.12 Analysis of Data in respect of Constraints and Challenges faced by the Partner Centers in Locating, Conserving and Digitally Preserving the manuscripts.

Constraints and Challenges	Locating MSS	Convincing the custodians	Financial Con strains	Lack of Training	Inadequate Equipment	Lack of Coordination	Lack of Supervision & Guidance
UoM	✓	✓	No	✓	✓	✓	✓
SFGS	✓	✓	✓	✓	✓	✓	✓
AS	✓	✓	✓	✓	✓	✓	✓
BORI	DNA	DNA	No	No	No	DNA	DNA
PP	✓	✓	✓	✓	✓	✓	✓
IVKRSM	✓	✓	✓	✓	✓	✓	✓
FC	✓	✓	No	✓	✓	✓	✓
SVM	✓	✓	✓	✓	✓	✓	✓
MJC	✓	✓	✓	No	No	✓	✓
IOS	✓	✓	✓	✓	✓	✓	✓
BBKKRC	✓	✓	No	No	No	✓	✓
KKSU	✓	✓	No	✓	✓	✓	✓
VSVSM	✓	✓	✓	✓	✓	✓	✓

Table 5.1.12.1: Constraints and Challenges in Locating, Conserving and Digitizing the MSS

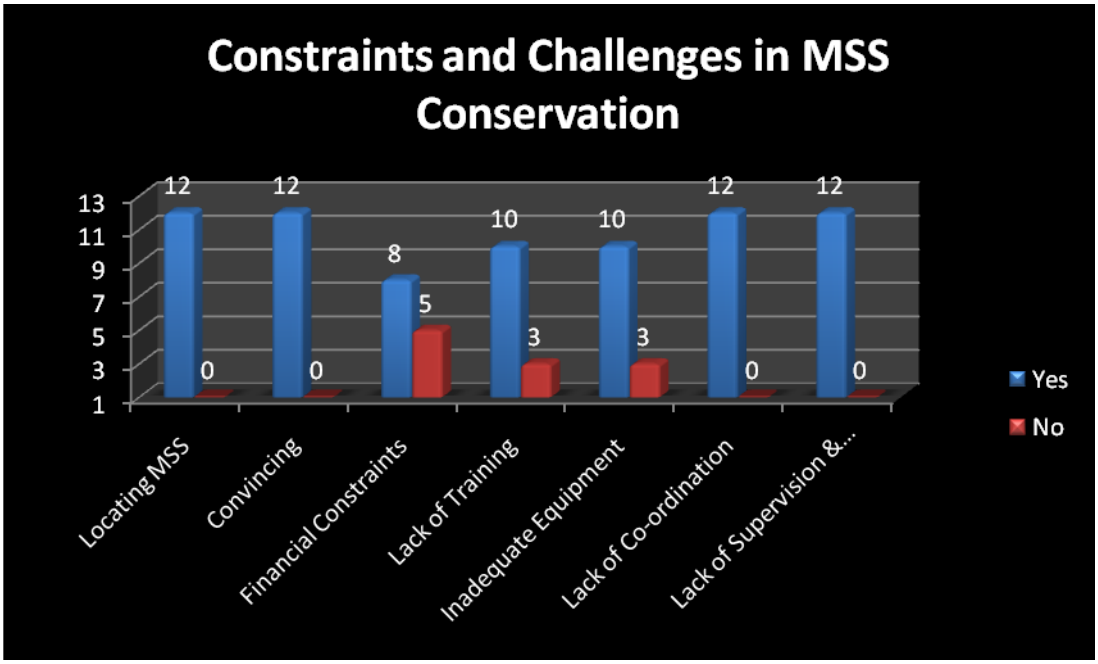


Fig 5.1.12.1: Constraints and Challenges in Locating, Conserving and Digitizing the MSS

Data Interpretation and Hypothesis Validation: This is a very important hypothesis to be put to test. The main focus of the present study was to understand the constraints and challenges faced by the NMM partner centers in their day to day working and also in locating the undocumented manuscript holding parties, conserving and digital preservation of the manuscript collection. Almost all (12 out of 13 i.e. 92.30%) the custodian centers are unanimous in admitting that locating the MSS holding individuals and institutions and convincing the custodians to either transfer their heritage materials to a more secured environment or allow documentation, conservation and digitization of manuscripts is a challenging task. Most custodians of manuscripts are generally averse to provide access to 'outsiders' as they generally suspect malefic intentions in such overtures. Almost all of the partner centers (12 out of 13 i.e. 92.30%) are also unequivocal in admitting 'lack of coordination and lack of supervision and monitoring by the apex agency (NMM)' as important factors affecting their role as partner centers. It was astonishing to note that many custodians of the partner centers are unaware of any NMM recognition status to their organizations and even informed that there was no interaction with the NMM for many years. This is a serious issue that needs immediate redressal by the apex monitoring agency, the NMM. 10 out of 13 centers (76.92%) lack proper training or appropriate equipment to carry out curative conservation. 8 centers (61.53%) report inadequacy of funds.

Thus the twelfth hypothesis 'various partner centers of NMM in Maharashtra have similar constraints and challenges in respect of locating, conserving and digital preservation of manuscripts' gets overwhelmingly validated.

5.1.13 Analysis of Data about Envisaged Future Plans of Various Partner Centers.

Institute	Definite Future Plans
UoM	
SFGS	
AS	✓
BORI	✓
PP	
IVKRSM	✓
FC	
SVM	✓
MJC	✓
IOS	✓
BBKKRC	
KKSU	
VSVSM	✓
Yes	7

Table 5.1.13.1 Future Plans of the MSS Centers

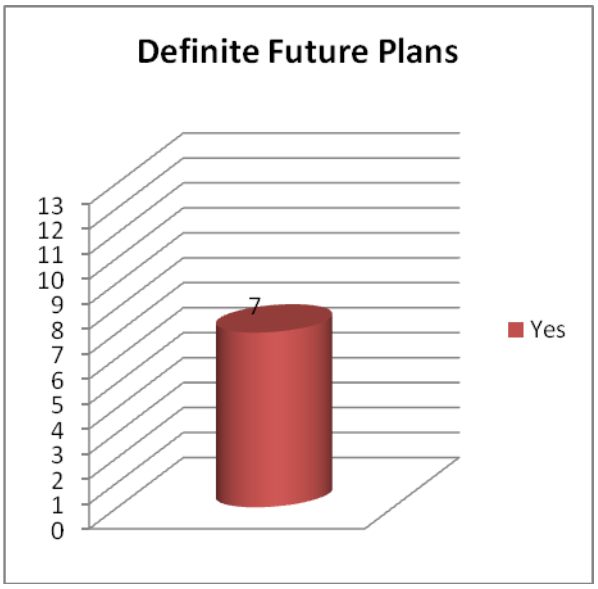


Fig 5.1.13.1: Future Plans of the MSS Centers

Interpretation and Hypothesis Validation: The above data clearly points out that seven out of 13 custodian centers (53.84%) have envisioned definite future plans for their institutions. It may be pointed out that MSS partner centers established in the Universities did not envisage any specific future plans as they are part of a larger picture and decisions are made at the university level. While the website of BORI claims that 'a complete digitization of data, documentation and images of manuscripts is planned in the immediate future' IOS 'is making efforts to establish a research library and museum at Thane'. The IVKRSM 'plans to establish a Tribal Cultural Art Gallery, Royal Gallery consisting of original photos of 175 nobles and kings. Another ambitious project of the Mandal is the publication of Sources of History of Marathas written by Historian V.K. Rajwade in Marathi in 22 volumes and translated into English by Dr. Vitthal Trimbak Gune former Chairman of Goa Archeology, in 5 abridged volumes'. VSVSM is looking forward to 'increasing store capacity in future' MJC has a plans to 'regularly conduct conservation training for regional centers in Maharashtra, purchase of display racks, more rigorous conservation of MSS in other

centers in Maharashtra and establishment of a manuscript gallery'. The other centers did not specifically mention their future plans.

With over 50% of NMM partner centers having definite future plans for their centers, the thirteenth hypothesis that 'various partner centers have well spelt out future plans' gets validated.

5.2 Conclusion: The above analysis of data and hypotheses validation showed that out of the 13 hypotheses, an overwhelming number of hypotheses, i.e., nine hypotheses (69.23%) stood validated. Hypotheses 4, 5 and 8 are invalidated. It is important to take a look at them individually as they throw light about the shortcomings and what is desired to be done. The 4th hypothesis that 'various partner centers of NMM in Maharashtra have sound financial standing' is invalidated as almost all the centers complain of inadequacy of funds. The 5th hypothesis 'various partner centers of NMM in Maharashtra have trained manpower' fails to get validated. And the 8th hypothesis that 'various partner centers of NMM in Maharashtra have been able to preserve substantial number of manuscripts since their inception' also stands invalidated. These failed hypotheses point to the dire need for enhanced support in respect of financial assistance, training and provision of required wherewithal for the MSS custodian centers in Maharashtra. As regards to the hypothesis number 7, though the first part of the hypothesis that 'various partner centers of NMM in Maharashtra have adequate storage facilities' is fully validated, the second part of the hypothesis that 'various partner centers of NMM in Maharashtra have adequate equipment and conditions for maintenance of manuscripts in good condition' is only partially validated. This again underscores the need for supporting the partner centers to purchase the required equipment and develop suitable infrastructure. The validated hypotheses point more towards the self-reliance of the MSS custodian centers rather than the advantage they receive by partnering with the NMM. The analysis of data collected from various centers has shown in ample measure the successful conservation and digital preservation of manuscripts by the National Mission for Manuscripts (NaMaMi) and Its Partner Centers in Maharashtra.

REFERENCES:

Das, A. K. (2008). *An evaluative study of some selected libraries in India undergoing the process of digitization* [PhD Thesis, Jadavpur University]. http://hdl.handle.net/10603/19137

Khan, N. (2019). *Collection Development Management and Use of Manuscripts in National Library Kolkata Rampur Raza Library Rampur and Maulana Azad Library Aligarh A Study* [PhD Thesis, Aligarh Muslim University]. http://hdl.handle.net/10603/292203

Madhusudan, P. (2017). *Digitization of Manuscripts In Oriental Libraries In South India A Study* [PhD Thesis, Sri Venkateswara University]. http://hdl.handle.net/10603/235054

More, T. D. (2015). *Role of oriental libraries in India with special reference to Deccan* [PhD Thesis, Tilak Maharashtra Vidyapeeth]. http://hdl.handle.net/10603/120584

Sharma, A. (2011). *Conservation and digitization of manuscripts in university libraries in India* [PhD Thesis, Panjab University]. http://hdl.handle.net/10603/106921

CHAPTER – VI

Summary of Findings, Outcomes, Recommendations, Suggestions for Future Research and Conclusion

6.0 Introduction

6.1 Research Outcome

6.2 General Observations

6.3 Summary of Findings

6.4 Recommendations based on Observations

6.5 Suggestions for Future Research

6.6 Conclusion

Chapter - VI

Summary of Findings, Outcomes, Recommendations Suggestions for Future Research and Conclusion

6.0 Introduction:

It is a well attested fact that the ancient and medieval periods of Indian history was a golden era for literary production on almost every conceivable topic under the sun. The sages, seers and poets of this land had produced enormous literature unmatched in any part of the world. The ancients chose a variety of media for enshrining their wisdom and transmitting to posterity – rock cut temples, palm leaves, copper plates, birch bark to handmade papers. Even though many of the media used for transmission of legacy withstood the test of time, a great many of them succumbed to the frenzy and bigotry of marauding invaders who destroyed and damaged this invaluable heritage of humanity irrevocably. Yet, thanks to the strong will of our fore fathers who hid these manuscripts from such pillaging fanatics in homes, temples, mutts and monasteries, millions of manuscripts managed to still survive till date. It is an awe evoking fact that despite such large-scale destruction as witnessed in Nalanda and other places in the medieval period, India continues to be the home for the largest number of manuscripts, estimates ranging from 5 million to 10 million manuscripts.

Like any other state in this historically and culturally rich nation, the state of Maharashtra also produced very rich literature that was preserved in manuscripts, thanks particularly to the rich legacy of saints and seers of this land. Nashik, one of the four sites of Kumbh Mela has been a place of pilgrimage for the people across the country thereby becoming home for vast manuscript collection. Owing to the hard work and dedication of stalwarts like Bhandarkar, Rajwade, Apte and others in the late 19th and early 20th centuries several thousand manuscripts were collected and preserved which later became institutional repositories of manuscripts. The National Mission for Manuscripts has tied up with 13 such centers across Maharashtra. The present research examined the manuscript collections of these institutions and evaluated their strengths and weaknesses in respect of their objectives, manpower, budget, financial standing, conservation equipment and facilities, facilities for the researchers, organization and technical procedures carried out on the manuscripts

such as classification, cataloguing, shelving, publication of catalogues and books, disaster preparedness and future plans, etc. The present study encompassed other centers as well that have not been recognized by the NMM but have considerable number of manuscript collections. Out of the thirteen centers, the in charges of eleven centers have provided the information in a detailed way. Two institutions, namely The Bhandarkar Oriental Research Institute, Pune and Prajna Pathashala (PP), Wai refused to fill the questionnaire. Hence the researcher had to rely on the information available on the website of BORI and the descriptive catalogue published by PP for compiling the data for this study. The study revealed the following facts:

6.1 Research Outcome:

The present research has yielded very significant results. The researcher began taking interest in manuscript conservation during the year 2013. The journey began with receiving a donation of about 50 manuscripts from a Pandit family from a small village which were written by various saintly figures of that region. Later another batch of about 300 MSS was received as donation to the college library in 2013 from a Mutt in Nanded district. This proximity to the MSS expanded into a research project under the Vice Chancellor's Research Motivation Scheme (VCRMS) during 2016-18 for 'Locating, Preserving and Digitizing Manuscripts Found in Maharashtra'. The researcher was motivated to attend a few training programs on conservation in 2014 and 2015. With this personal exposure to MSS and the encouraging results of VCRMS project, the researcher became determined to carry out a more exhaustive study and decided to choose this topic for his second doctoral degree in 2017. The deep interest taken by the researcher resulted in his undergoing one month advanced training in MSS conservation in 2018 and subsequent establishment of a Manuscript Conservation Center and Manuscript Resource Centers in the college. The researcher has also entered into an MoU with the NMM for digitization of the MSS collection. The significant outcome of the research is the establishment a full-fledged conservation laboratory in the library and was able to not only conserve the manuscripts present in the researcher's college library but also extend services to conserve manuscript heritage in the Deccan College, Pune.

The research experience of the investigator has been very rich and rewarding. In all, the researcher has been able to collect and conserve more than 330 manuscripts from

different source, the list of which is appended to the report as mentioned in the previous chapter.

Having extensively travelled across Maharashtra in an effort to locate ancient manuscripts held in various places such as mutts, monasteries, temples and individual houses, and having made concerted effort to convince the holders of manuscripts to handover the manuscripts to the investigator for their preservation to the posterity, the researcher has come to the following conclusions:

6.2 General Observations:

1. There is no doubt that Maharashtra is a state that has innumerable number of manuscripts present in various locations. However a great number of such manuscripts are stacked as private collection and hence are 'undiscovered' yet, leaving them inaccessible for conservation and unreachable to scholars.
2. There is high degree of apathy on part of the general public towards their cultural heritage and are not bothered about losing their ancient legacy.
3. It is a great challenge to locate the manuscripts stashed in households and temples. Despite concerted efforts and appeals made through newspapers, very few manuscript owners turn up for inquiring.
4. Locating manuscripts in mutts, monasteries and temples require very extensive travelling and establishing rapport. This requires multiple visits to the same places again and again.
5. The owners of manuscripts are generally averse to hand over their collection to any agency or individual for conservation, despite their knowing that the manuscripts if not properly conserved immediately would become irreparable and would be lost forever.
6. There is generally skepticism and suspicion in the minds of the owners of manuscripts. They tend to believe that conservation and digitization is only a guise to stealthily take away their rare collection and 'sell them to foreigners'. It is very difficult to dissuade them from such misconception.
7. The condition of most of the manuscripts stashed in by the individual householders and temples and mutts is not very encouraging. Most of them require urgent conservation so as to extend their life to a few more decades.
8. The knowledge of conservation techniques and digitization procedures is not generally known by the persons holding manuscripts.

9. As regards to the collection of MSS in the custodian centers, it is observed that they have very high historical and cultural significance. Most of them date back to more than 200 years. The collections are predominantly paper MSS.
10. Manuscripts of most of the custodian centers were collected by the hard work and resilience of stalwarts in the late nineteenth century who travelled across the length and breadth of Maharashtra, sometimes even traversing as far as present day Pakistan. It is because of the sheer determination of these visionaries to preserve the MSS heritage for the future generations that we are now able to witness the collection. It requires similar efforts even in the present times to unearth MSS that are still present in individual homes, mutts and temples. The NMM in this regards has done commendable job in its first two terms when it has been able to conduct survey and document MSS sources. Since it is very difficult to put a price on a MS (which in deed is a very bad practice and should be discouraged at all levels) MSS are not generally bought by the custodian centers. It is primarily and substantially through donations that the custodian centers have been able to procure their collections.
11. The governmental efforts to conserve and digitize manuscripts are not generally well known and people are not familiar with the activities of agencies such as National Mission for Manuscripts etc.
12. The NMM partner centers in Maharashtra have been established with the prime objectives of fostering research, propagating history and culture, arousing interest about Indian history culture and tradition. Interestingly, more than 61% partner centers are established with the sole purpose of preserving manuscript heritage for posterity.
13. Preserving the wealth of manuscripts is worth a task only when one takes peep into their content. The study has revealed that all the MSS custodian centers in Maharashtra provide reasonably good ambience and facilities for the researchers such as reading rooms, research cubicles, boarding and lodging facilities, photocopying facility etc. However what is highly disheartening is the lack of interest on the part of the researchers which is evident from the number of visitors the MSS custodian centers get each year. Except for the IVKRSM no other MSS center reports annual visitors more than 200. Other centers depict even worse picture where the numbers do not even enter double

digits. The high numbers projected by IVKRSM are owing to the general readers who visit their library to read daily newspapers and those who visit the museum. These numbers are unlikely of those interested in manuscripts alone. The Mandal does not maintain separate register for manuscript visitors and so the claim could not be verified.

14. Though most of the private NMM partner centers have fixed corpus fund and operate on the interest accrued on it, sale of books published, donations, rentals etc., the annual budget is barely sufficient to pay the salary. These centers require financial assistance to procure equipment and wherewithal such as thermometers, hygrometers, dehumidifiers, display racks, temperature control mechanisms, insect inhibitors, etc.
15. The financial assistance extended by the NMM to the MCCs is very irregular and causes lot of stress to the staff recruited under the scheme of grant. The employees are starved of their salaries for months together before the next installment of the grant is released.
16. The financial grant by the NMM for an MCC is limited only to the salary grant of the staff and there is not much leeway allowed by the NMM for the purchase of additional material and equipment over and above the first installment of grant received for the establishment of conservation laboratory.
17. One of the conspicuous shortcomings noticed in the study is the utter lack of trained manpower in these centers.All the partner centers are unanimous in maintaining that their staff is not trained in conservation procedures and techniques. Hardly any staff member is exposed to any preventive and/or curative conservation techniques. There is urgent and dire need for organizing periodic training programs.
18. Replacement of dusty wrapping cloths, periodic redeployment of traditional insect repellents, periodic exposure to natural air under shade, etc., are not implemented, owing to which the actual condition of the MSS is not really known by the custodian centers.
19. There is no periodic supervision by the NMM about the work carried out by various partner centers. Only the MCCs seem to submit periodic reports of MSS conserved. But none of the centers seem to receive informed feedback and guidance against the activity reports submitted by them. The communication is always predominantly one way from the MCC to the NMM

and expected guidance, supervision and counseling from the other end is generally a rarity.

20. All the partner centers of NMM in Maharashtra were vocal in admitting the constraints and challenges faced by them. It is found that all of them have similar constraints and challenges in respect of locating, conserving and digital preservation of manuscripts and are in need of a more professional guidance and supervision by the apex agency.
21. Though some of the custodian centers have produced descriptive catalogues and even published books based on their MSS collections, scholarly scrutiny of the MSS content is yet to be done in many centers. Scholars have to be commissioned, as is done by the PP, to carry out compiling and editing the texts based on their MSS.
22. Though over 50% of NMM partner centers describe definite future plans for their centers, they are mostly concerned with general development plans but not specific to MSS publication or greater accessibility.
23. None of the partner centers have any well defined collection development policies.
24. None of the partner centers have disaster management policies.

6.3 Summary of Findings

1. Of the 13 NMM partner centers, 8 (61.53%) identify themselves as academic and 9 (69.23%) as registered Society/Trust, 7 (53.84%) as special libraries and 3 (23.07%) as community oriented establishments.

2. As regards to the age of establishment, only 3 centers (23.07%) are established in the last 25 years. 2 centers (15.38%) have been established between 25 -50 yrs., 4 centers (30.76%) between 76 -100 yrs., 2 centers (15.38%) between 101-125 yrs., and 1 center each are established between 126 -150 yrs., and 150 - 175 years.

3. All the NMM partner centers (100%) are established with the common objective ‘to carry out research, publicize and propagate history and to arouse interest about Indian history, culture and tradition’. 8 of the 13 centers (61.53%) were established with the sole objective of preserving the manuscript heritage for posterity. It may be pointed out that though other

centers also acquired MSS in the course of their existence but manuscript preservation for the posterity was not the sole aim behind their establishment.

4. As regards to the number working days in a week, it has been found that except for 3 centers (KKSU, BBKKRC, SFGS) (23.07%) which are open on an average for 22 days in a month (excluding holidays) all the remaining centers (76.92%) are open for 24 days in a month. Thus all the centers are open for visitors for at least 20 days in a month which is satisfactory from the visiting researchers' point of view. As regards to the number of working hours per day, VSVSM is the only center that is open for just 3 hours a day. Rest 11 centers (84.61%) operate averaging to about 6 hours a day which is reasonable.

5. According to the FC website, the reading room of FC is perhaps one of the largest reading rooms of any library in the state of Maharashtra with 450 seats. UoM has largest number of research cubicles (35), whereas AS has facility for two researchers at a time. KKSU, SFGS, FC, VSVSM provide digital copies to the visitors, where as IOS and SVM provide direct access to originals.

6. It is disheartening to note that very few researchers take interest in the MSS. The number of visitors in last 5 years in 8 centers (61.53%) is less than 30 per year. Only IVKRSM claims that it has average visitors of 2300 per annum. The data in respect of two centers (BORI and PP) were not provided. 6 centers (46.15%) even offer boarding and lodging facilities.

7. In IOS though the access to MSS is free, there is a provision for voluntary fee of Rs. 250 per year. In BBKKRC, membership of Rs. 20 per day and Rs. 500 life membership for Sr. Citizens and Rs.1000 life membership for others are available. In SFGS there is an annual fee of Rs.1000 per annum and a charge of Rs. 20 per day. In SVM no charge is levied for boarding and lodging in the institute. The Mandal provides lunch to the researchers at a nominal cost of Rs.60. There is a membership fee of Rs.250 and Rs.50 per bundle is levied as handling charges. Photocopy charges are collected extra. In IVKRSM Rs. 20 per day is charged from the researcher availing the services. The manuscript collection in VSVSM is open to all. In the UoM, there are

multiple options for the visiting researchers ranging from Rs.20 per day or Rs. 75 per week or Rs.120 per fortnight, etc.The above analysis of data clearly upholds the hypothesis that 'various partner center of NMM in Maharashtra have good facilities for the researchers'.

8. It is found that all the NMM partner centers in Maharashtra (100%) predominantly acquired their MSS collection through voluntary donation by individuals and sometimes by institutions.

9. Almost all partner centers suffer from inadequacy of funds. 6 out of 13 centers (46.15%) are operating using their own funds and only 3 centers receive fund from NMM in the capacity of MRC/MCC. 6 centers (46.15%) have received funds from other government agencies in the past. 5 centers (38.46%) rely on the donations received from time to time from the donors. The budgetary allocations of these NMM partner centers range from 2 lakhs per annum (AS) to 9 lakhs per annum (IVKRSM). 9 out of the 13 centers (69.23%) claim inadequacy of funds and 10 centers maintain that they have not received regular funding from the NMM. 11 centers (84.61%) are located in their own building and 12 centers (92.30%) report that the condition of their building is good. 8 centers (61.53%) point out need for IOS and SFGS are located in leased premises.

10. In7 centers (53.84%), the Librarian, Assistant Librarian or the Project Coordinator is the in charge of MSS collection of the respective centers. One center has a full time Conservationist (7.69%) appointed to look after the MSS collection. In the remaining 5 centers (38.46%) the Administrative Officer or Trustee is vested with the responsibility of looking after the MSS collection. The number of staff in each center ranged from just one staff (BBKKRC) to 25 (UoM) and 5 centers operating with just 2 staff members. It may be pointed out that in case of the MSS custodian centers operating from within a university or a higher education institute, the number of staff reported is the entire library staff and that no separate staff is allotted for the exclusive job of looking after the manuscript collection. Only 2 centers (15.38%) have 3 trained personnel and 2 (15.38%) other centers have 2 and 3 (23.07%) centers have one trained personnel in manuscript conservation. Remaining 6 (46.15%) centers have no trained persons in MSS conservation. 11 of the 13 centers

(84.61%) point out that their staff members did not receive adequate training in manuscript conservation. 10 out of 13 centers (76.92%) maintain that their staff members do not get exposed to periodic training with regard to preventive and curative procedures and latest trends and developments in conservation of MSS.

11. It is observed though every partner center claims a particular figure as the total number of their collection, a close inspection in almost every case revealed disparity in numbers. It is a fact that most of the MSS custodian centers do not have exact number of their MSS collection.

12. The primary collection in all the NMM partner centers is of paper MSS. The number of paper MSS possessed by the partner centers vary widely with MJC having least number of MSS (339) and BORI having the highest number (30000). Other centers have MSS between 3000 to 12000 numbers. Apart from paper MSS, almost all the centers (12 out of 13 – 92.30%) have rare books and other antic collections. On an average about 20% MSS bundles in the collection of various centers are found to be incomplete. Subject wise on an average each partner center has about 17 subject heads under which their MSS collection is classified. Most of the MSS primarily belong to the period 1601 AD to 1900AD. Sanskrit and Marathi are the predominant languages with Farsi MSS also found in many partner centers. Devanagari, Modi are the most common scripts found in the MSS. Only 2 of the 13 centers (15.38%) claim to have a written collection development policy.

13. 8 centers (61.53%) use steel almirahs for storing their MSS and 4 centers (30.76%) use wooden almirahs. 2 (15.38%) centers are using mobile compact storage system for stacking their MSS collection. 6 centers (46.15%) have showcases to exhibit their MSS collection. 12 out of 13 centers (92.30%) claim adequacy of storage facilities. As regards to equipment and conditions for maintenance of MSS in good conditions, only 2 centers (15.38%) have Air conditioning to control the room temperature and none have humidity control mechanisms in place. 6 centers (46.15%) have fumigation chambers and 12 (92.30%) have fire extinguishers installed. Except for one center (FC) none have smoke alarms. While 11 centers (84.61%) have CCTV cameras set up, only 3 centers (23.07%) have

thermometers to measure daily temperature variations and 3 centers (23.07%) use pH strips to check acidity of MSS. Only 1 center (7.69%) has hygrometer installed.

14. Of the thirteen centers, ten centers (76.92%) report their MSS collection to be reasonably in good condition. Two centers (15.38%) consider their collection to be average (AS & MJC) in condition and only one (SFGS) center (7.69%) reports their collection to be in bad condition. All the centers (100%) identify aging and environmental factors are the main reason for the deterioration of their MSS collection.

15. As regards to the conservation practices adopted, seven centers (53.84%) use one or other form of traditional methods of conservation and six centers (46.15%) employ modern methods such as sprinkling of pesticides, use of fumigation chamber and use of naphthalene balls. Five centers (38.46%) have fumigation chambers which are sparingly used. Barring BORI, BBKKRC and MJC(23.07%),none of the centers have neither the wherewithal nor the expertise in employing the modern methods of conservation of MSS using chemicals. 12 out of 13 centers (92.30%) wrap their MSS with red/yellow/white cloth to prevent exposure to dust and insects. Of the thirteen custodian centers, only five centers (38.46%) namely, BORI, BBKKRC, FC, UoM and MJC have been practicing conservative practices in their respective centers. Rest of the centers are limited only to the extent of taking pest control measures only.

16. Of the 13 centers, 10 centers (76.92%) organize their collection as per the accession number and rest 3 centers (23.07%) organize their MSS as per the name of the collection (donor's name). Even within such collection based organization, accession numbers are used to sub-organize the MSS within the collection. 11 centers (84.61%) have accessioned their catalogues but two centers (SFGS & VSVSM) have not accessioned their collection. None of the centers have made use of any library classification system such as DDC, UDC or CC. 12 Centers (92.30%) have catalogued their MSS. 8 centers (61.53%) have prepared book catalogues and only 2 centers (15.38%) have made use of OPAC to provide access to computerized catalogue of their collection. 3

centers (23.07%) have prepared softcopies (Excel sheets/pdf files) of their collection.

17. It is evident from the above data analysis that eight out of thirteen custodian institutions (61.53%) have published both descriptive catalogues and books based on their manuscript collection. This is a very welcome sign as the contents of the manuscripts are being brought to the lime light. While BORI is the frontrunner in the publication of descriptive catalogues with 13 volumes, SVM with 165 and AS with 146 books stand tall in the publication of books based on their manuscript collection. In all 29 catalogues and 470 books were brought out by the custodian centers.

18. Eleven out of 13 centers (84.61%) have digitized their manuscript collection either partially or completely. It may be pointed out that BORI has microfilmed its manuscript collection much before the advent of the digital technologies. The case of IVKRSM is an interesting one. Though the manuscript collection of IVKRSM is less than around 3000, the center has a huge wealth of historical documents of about 3 lakh manuscripts. The Mandal has been able to preserve these documents through digitization. In all, more than 47,800 manuscripts and about 300000 documents have been digitally preserved by the NMM partner centers. All the MSS of KKSU, AS, FC, VSVSM and PP, about 80% of MSS in respect of SFGS and SVM and less than 50% MSS in respect of UoM, MJC are digitized. It is pertinent to note that digital copies of only 4 out of 11centers have been uploaded either on internet or on intranet. Thus even though the content is digitally preserved, the same is not made accessible to the researchers in many centers. The centers will have to be encouraged and motivated to make the mss content openly available to the researchers in the interest of the common good as knowledge shall not be restricted.

19. Almost all (12 out of 13 i.e. 92.30%) the custodian centers are unanimous in admitting that locating the MSS holding individuals and institutions and convincing the custodians to either transfer their heritage materials to a more secured environment or allow documentation, conservation and digitization of manuscripts is a challenging task. Most

custodians of manuscripts are generally averse to provide access to 'outsiders' as they generally suspect malefide intentions in such overtures.

20. Almost all of the partner centers (12 out of 13 i.e. 92.30%) are also unequivocal in admitting 'lack of coordination and lack of supervision and monitoring by the apex agency (NMM)' as important factors affecting their role as partner centers. It was astonishing to note that many custodians of the partner centers are unaware of any NMM recognition status to their organizations and even informed that there was no interaction with the NMM for many years. This is a serious issue that needs immediate redressal by the apex monitoring agency, the NMM. 10 out of 13 centers (76.92%) lack proper training or appropriate equipment to carry out curative conservation. 8 centers (61.53%) report inadequacy of funds.

21. Seven out of 13 custodian centers (53.84%) have envisioned definite future plans for their institutions. It may be pointed out that MSS partner centers established in the Universities did not envisage any specific future plans as they are part of a larger picture and decisions are made at the university level. While the website of BORI claims that 'a complete digitization of data, documentation and images of manuscripts is planned in the immediate future' IOS 'is making efforts to establish a research library and museum at Thane'. The IVKRSM 'plans to establish a Tribal Cultural Art Gallery, Royal Gallery consisting of original photos of 175 nobles and kings. Another ambitious project of the Mandal is the publication of Sources of History of Marathas written by Historian V.K. Rajwade in Marathi in 22 volumes and translated into English by Dr. Vitthal Trimbak Gune former Chairman of Goa Archeology, in 5 abridged volumes'. VSVSM is looking forward to 'increasing store capacity in future' MJC has a plans to 'regularly conduct conservation training for regional centers in Maharashtra, purchase of display racks, more rigorous conservation of MSS in other centers in Maharashtra and establishment of a manuscript gallery'. The other centers did not specifically mention their future plans. Thus over 50% of NMM partner centers have definite future plans for their centers.

6.4 Recommendations based on Observations:

1. The NMM may chalk out separate budgetary provisions in line with the National Archives of India for preservation and extend financial support to these partner centers.
2. Instead of making the training voluntary, the NMM should ensure that mandatory periodic training is imparted to all technical staff members of the custodian institutes, particularly the manuscript conservation staff.
3. It is pertinent to note that digital copies of only 4 out of 11centers have been uploaded either on internet or on intranet. Thus even though the content is digitally preserved, the same is not made accessible to the researchers in many centers. The centers will have to be encouraged and motivated to make the mss content openly available to the researchers in the interest of the common good as knowledge shall not be restricted.
4. It was astonishing to note that many custodians of the partner centers are unaware of any NMM recognition status to their organizations and even informed that there was no interaction with the NMM for many years. This is a serious issue that needs immediate redressal by the apex monitoring agency, the NMM.
5. Training is utterly inadequate. Except for BORI, BBKKRC and MJC where conservation laboratories are established, hardly very few staff members of resource centers have any knowledge of preventive conservation, leave alone curative aspects of conservation.
6. The NMM must ensure that the grants are released from time to time to the grantee center without any delay. The irregularity in the release of grant for months together acts as a severely discouraging factor on the psyche of the conservation staff affecting their morale and verve to be committed to the cause of heritage conservation for the posterity. Because the payments are not released timely, the Project Coordinators of partner centers find it difficult to ask his team members to be punctual or demand discipline in work, thus gravely affecting the quality of work which would otherwise have been better.

7. Periodic meeting with all the MCC and MRC Coordinators is to be conducted on a single platform at least once in three months so that NMM officials come to know the practical difficulties faced by various partner centers.

8. The NMM must publish a hand book with specific guidelines and supply it to partnering agencies containing every detailed dos and don'ts starting from guidelines on surveying, locating, acquiring, accessioning, cataloguing, digitizing, conserving, storing, transporting and plethora of other issues that require professional counseling. The handbook must also contain all the formats, condition reports, proposals, contact details of conservation professionals and experts, other partnering agencies, etc.

9. Financial discipline must be practiced by all those involved in the noble task of heritage conservation, including the employees of the apex agency. A lot of money is spent on conducting workshops on preventive and curative conservation by the NMM. The trainers, NMM staff spend a lot of money on air travel and luxurious stays during such training programs. The auditing agencies must advise the NMM and its training partners to practice reasonable austerity in their spending particularly on such spending which does not have direct bearing on the actual act of conservation.

10. In respect of long term storage, the NMM policy is to create DVDs of digital images scanned and later creating microfilms of those digitized content, which according to the NMM would protect the content for at least five to six hundred years. Instead, the NMM must tie up with Information and Library Networks (INFLIBNET) center which has a huge cloud storage facility used for storing the national repository of theses and dissertations produced in Indian universities. The NMM must tie up with National Information Networks (NIC) or INFLIBNET. This cloud storage facility is to be used for storing the digitized MSS content.

6.5 Suggestions for Future Research

The field of MSS conservation is a highly neglected area. Not many agencies are involved in the pursuit of noble task of saving the nation's heritage for the future generations. There is not much serious scientific research carried out in universities and scientific laboratories on better conservation practices using natural adhesives and

preservatives, save alone some recent research started at National Research Laboratory for Conservation Cultural Property (NRLC), Lucknow. Suggestions for the future research are four pronged:

1. One is based on the social science research model where the evaluative study as is carried out in the present research is to be conducted across the country about the working of various MSS custodian centers. The cost-effectiveness of NMM is to be critically examined.

2. The other prong of research must be based on scientific investigation of discovering harmless methodologies and techniques of conservation using natural and traditional substances. The NRLC and other laboratories must also focus on coming up with cost effective Indian versions of 6gsm and 9gsm Indian tissue papers and gin shi fu adhesive, Lokta paper and other imported material. This would greatly reduce the cost of conservation.

3. The third line of research must focus on developing more effective automatic character recognition, translating and parsing software for Indian languages which should be able to recognize handwriting patterns in various Indian languages with a high degree of accuracy. This would enable creation of searchable digital content of MSS for Indian languages as well, which in turn would greatly boost research on MSS content. A sub but most over looked area is creation of comprehensive dictionaries of all archaic and current words in all Indian languages. While meaning of any English language word is easy to know with very less effort, the same is not the case for many Indian language words due to which it is generally difficult to decipher the meaning of many old texts. This greatly discourages scholarship and research on texts written in Indian languages a hundred years ago.

4. The Fourth prong of research suggested is literary and scholarly where linguists and subject experts must be pooled in to look into the contents of manuscripts and publish at least a couple of volumes a year. A target oriented approach in publication of manuscript based e-books is to be adopted which would disseminate the wealth of wisdom embedded in the MSS to a larger audience.

6.6 Conclusion

Manuscripts in India are like those orphan children whose welfare is not bothered by the members of the society who are too busy and occupied in the pursuit of pleasures

of life. The MSS are like a scroll of legacy left by our fore fathers in the interest of improving our fortunes through the wisdom contained in them. But in our vanity and preoccupations, we fail to recognize their true value and discard them off as old and outdated stuff having little relevance to the modern times. This is a folly which we would repent in future when the world would complete a full circle and begins to return to the old values and ideals as the guiding principles for life. The world has already begun to take a more respectful look at the timeless Indian wisdom thanks to the revolution in the social media, because of which people of late are beginning to get more exposed to the Indian culture. Our recognition of the true value of this great Indian timeless wisdom embedded in various heritage materials including MSS will go a long way in protecting our identity of what we are as Indian in the long history of human race.

CHAPTER – VII

Policy Framework and Elements of Model Reference Manual

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Chapter – VII

Policy Framework and Elements of Model Reference Manual

7.0 Introduction

This chapter suggests a policy framework and elements of model reference for custodian, conservation & digital preservation centers for manuscripts. It suggests a broad policy framework and a reference manual for effectively locating, collecting, conserving, and digitally preserving the manuscripts.

The government of India through NMM is spending large sums of money on the preservation and conservation of manuscripts. However since no policy framework is provided to the custodian as well as conservation centers in respect of the due procedures to be followed, the custodian and conservation centers are functioning like a rudderless boat in the midst of a sea. Hence formulating a written policy in respect of all aspects of manuscript conservation, starting from surveying, locating, acquiring, transporting, storing, handling, conserving, exhibiting and digitally preserving is a good practice to be adopted by every manuscript custodian and conservation centers. Such a policy document provides required direction to the manuscript custodian and conservation centers and helps in right decision making. Though individual centers must be encouraged to customize their policies to suit the local needs, a broad policy framework is to be envisaged and provided by the apex agencies working in the field of conservation such as the NMM so as to provide guides and anchors to the individual centers. Such written policy framework will help them choose the right option when confronted with the question of picking the right choice and making the right decisions. Manual must be carefully designed and should be self explanatory. The policy document circulated among custodian and conservation staff may provide practicable solutions in raising funds from the Corporate Social Responsibility fund of MNCs. Similarly details about various government schemes and schemes of financial assistance from international agencies such as UNESCO, British Library, etc., may be compiled and provided in such document. This will greatly help the custodian centers

to raise funds for MSS collection, display, preservation, documentation, study, publication, etc.

A written policy functions as a reference manual for all the staff involved in the conservation activity and also helps in training the new recruits in the intricacies of manuscript conservation. It will also enable to demonstrate the work ethics of the conservation agency and helps in building trust among the prospective manuscript donors. There should be an overall policy in detail concerning manuscripts which includes periodic training schedules for the staff.

To ensure the staff follows the guidelines and instructions, conservation and digital preservation knowledge of the staff should be periodically updated. To this end a training programme on preservation issues and training materials should be developed and produced. The reference manual must envisage a detailed list of training activities for the conservation staff. The manual may also explicitly state clear cut division of tasks and responsibilities, based on existing roles and expertise. Personnel should be trained not only in the principles and practices of conservation and preservation, but also in the use and maintenance of available equipment.

The manual must list out the best practices adopted world over in conservation and digital preservation of manuscript heritage by various world agencies. The manual must provide contact details of noted scholars for deciphering the old scripts like Modi, Takri, Nagari, etc. and technical experts in conservation and preservation. The manual must also suggest ways and means to minimize administrative obstructions often confronted by the research scholars in accessing manuscripts. Often, if someone needs an illustrated or unpublished MSS for research purpose, the formalities of most of the institutions are such that it is difficult to get access to them. Last but not least, the written policy must also encompass disaster management plans for the custodian centers to help them preserve these relics of past in the event of unforeseen calamities.

7.1 Policy on Surveying and Locating Manuscripts:

Every manuscript custodian center must necessarily design pamphlets, brochures, mailers, hand outs, etc., to propagate the idea of manuscript conservation among the

members of the society. A list of manuscript holding institutions, individuals is to be created, which needs to be periodically updated. A policy of keeping them informed once in a quarter about national and international efforts for conservation of manuscripts, facilities available for conservation in their vicinity, future training programs to be conducted by the conservation center, etc., is to be formulated. Production and distribution cost for such newsletters can be considerably reduced by distributing softcopies using emails and other social networking tools. Social networking media such as Facebook, Whatsapp, etc., will greatly help in disseminating the information to a wide mass of populace and reaching the target audience. Religious congregations such as Kumbh Mela, annual festivals of various temples and Mutts etc., can be potential time for contacting the untapped MSS holders and persuade them for their conservation for posterity. The policy document must explicitly state that the sole aim of the custodian center is preservation of heritage material for posterity and that there is absolutely no commercial angle involved. The center must also make it amply clear through its policy document that the manuscript holding individuals/institutions are free to retain the collection with themselves so long as they are sure of providing appropriate milieu suitable for their safe keep and that the custodian center would provide necessary support in the conservation of their manuscript collection by helping them liaison with governmental conservation agencies. However such individuals/institutions must be encouraged and persuaded to allow greater access to their collection by digitizing and making them available to the researchers so that the wisdom contained in their collection reaches wider spheres. They should be encouraged to prepare an e-catalogue of their complete collection and make it available to the world audience via the web. Assistance may be provided to such individuals/institutions in developing their web pages and put the information about their rare collections.

7.2 Policy on Collection Development

The custodian center must also have clear written collection development policy in identifying the kinds of manuscripts it accepts or it seeks to acquire. It is possible that various custodian centers have their own set of choices and preferences in building their collections and so the selection of material may vary from center to center. For example one custodian center may specialize on the MSS relating to a specific

historical personage such as Chhatrapati Shivaji, or another custodian center may primarily be interested in Ayurveda, Siddha, Unani and other alternative medicines, and some other center may be interested in building their collection of a particular religious sect (Jain, Mahanubhava, Swami Narayan, etc., to name a few). Ruth B. Bordin and Robert W. Warner advise the MSS centers not rely on 'a spur of the moment inspiration but on a carefully drawn, thoughtful program that implements the main purpose of the library' (1966, p. 28). The advantage of a well thought out collection development policy enables the scholars to study like or related materials together (Duckett, 1975). A clear and well spelt out acquisition policy with mission and objectives will provide proper direction to the efforts of the staff involved in acquiring or accepting manuscripts lest the center should end up with growth of poor collections of marginal value. Policies for cooperative collecting activities by engaging with other active agencies can also be envisaged. As Faye Phillips (1984) points out 'what to collect and how to collect, together with the problems of competition and deaccessioning should be the central themes of manuscript collecting policies' (p.31). He points out that a well laid policy must contain the definition of purposes, collecting competition, the research value of materials collected the methods and procedures for deaccessioning of collected materials.

David Gracy advises manuscripts curators to "define clearly in their policy statements, the fields in which they will collect," and to "prepare formal statements of policies explaining the functions and services the archives will, and will not perform. . . . The policy matters most commonly included are the collecting purpose and goals, a description of how the material will be received, handled, and used, and the establishment of an advisory committee" (Gracy II, 1972, pp. 23–24).

7.3 Policy on Cataloguing, Indexing and Abstracting

After obtaining the MSS in the custodian center, the first job is to initiate a process of identification of the MSS in respect of its title, author, language and script used, date/period, subject matter, special features, rarity, medium of MSS, etc. This may require taking help of scholars of various fields with whose help, introduction and abstract of the manuscripts is to be prepared. A policy framework describing the details to be incorporated while cataloguing, indexing and generating abstract of the MS is to be devised. Such an indexing and abstracting of MSS provides summarizing

of documents and assigning of descriptors for referencing the MSS. The Government of India's descriptors for preparation of a descriptive catalogue could be a good starting point for this. The indexed terms can also be directly used in preparing the descriptive metadata of the MSS which can be used for hosting the softcopies on the web.

7.4 Policy on Preventive and Curative Conservation of MSS

The manuscripts obtained in the custodian center are to be inspected and those which are in bad conditions are segregated and treated with curative conservation techniques. Even the MSS housed in the center need periodic inspection and tending by the custodian staff. A policy describing the right blending of traditional and modern chemical conservation techniques need to be framed. The insect repellant herbs and chemicals need periodic replacement with fresh substances. How frequently these are to be replaced and with what quantity are to be clearly mentioned in the policy document which can then serve as reference manual for conservation staff. Starting from recommendations on periodic inspection, daily housekeeping, exposing the MSS to fresh air under shade during Bhadrapada month (late August/September), dusting and replacing the wrapping cloth with fresh ones, all and the sundry aspects of preventive conservation are to be clearly stated in the policy document. The steps for curative conservation including do's and don'ts, what to do when a manuscript is found to suffer from a particular undesired condition, etc. are to be prepared so that the conservation staff know what is to be done at a particular situation. List of conservation centers where professional conservation services are offered is to be prepared for easy reference and consultation.

7.5 Policy on Scanning/Digitization of Manuscript Collection

As a first step, guidelines in respect of selection of material for digital preservation of heritage content shall be formulated. Policy document must spell out clearly the goals and objectives, target audience, copyright restrictions, funding, and institutional capabilities. Clear policy on resource aggregation, detailed image description, data visualization, geospatial mapping, use of social media for promotion etc., will help provide the digital content to the target audience more accurately and efficiently. It will help avoid inconsistencies in variations in scanning resolution, different file

formats and compression techniques, which hamper the information acquisition and retrieval.

Policy on collaborating with the other institutions to avoid duplicity of work may also be spelt out. Experience accrued from various digitization projects world over shows that it is cheaper to first make microfilm and then scan it, than scanning from the original book. While formulating the policy framework for digitization, it is to be kept in mind that interaction with a digital surrogate can never provide the full range of knowledge that is gained from interacting with physical collections. Hence just as in the case of a new physical collection digital collection is to be documented which can be made available to researchers for primary level information gathering about the collection. The policy document must recommend the personnel working on digitization to preserve while digitizing, the look and feel of the complete original object, and enhance its study as an historical artifact (Panage, 2003). Preserving both the structure and context of the original document while digitizing and maintaining a link back to the catalogue record is a very important step in digitizing and making them accessible across the internet. The policy document which also serves as the guide book for digitizing staff must make a special mention of this point.

The policy framework must conform to the standards enunciated by international authorities such as NMM, IFLA, LoC, UNESCO and other such important players leading the case of heritage conservation enshrined in the manuscripts. Internationally accepted standards in respect of high-resolution images, technical specifications about the images, information about copyright, a scale and colour chart, zooming capability, full-text searching, full or partial transcriptions of the texts, etc., may be incorporated. Use of persistent identifiers for the digital resources helps in tracing the digital object (image) across all platforms and back to a description of the physical object at the repository.

Another important aspect of digital policy framework for scanning and digitization of the MSS collection for posterity is to include a decision on whether the custodian center would outsource the job to a third party or whether it would like to develop its own digitization set up within its premises. The pros and cons of both the choices have been deliberated in the third chapter. Developing own set up will be a better choice if the center sees the prospect of constant inflow of new MSS year after year

and has necessary financial standing to invest on necessary equipment and wherewithal. In house scanning will also ensure that all the collection is uniformly digitized and metadata, file naming, storage, back up, migration etc., are standardized. When in house digitization of MSS is the choice, it would be important to set up a committee of technical experts for selecting suitable scanning equipment. Cost benefit evaluation of various scanners, their capabilities and features, ease of handling, etc., vis-a-vis the investment cost needs to be carried out by the expert committee. A general recommendation based on experiences of digitization projects world over may be included in the suggested framework.

A written policy in respect of how the scanned image is to be handled is to be clearly spelt out. The specifications of raw master image, what leeway is allowed in fine tuning various aspects of clean master image and the compression to be adopted for derivative/access quality images are to be clearly specified. Creation of thumbnails for website display is a good idea that helps in attracting the prospective researchers and hence may be recommended in the policy document.

The policy framework should also contain a technical section which can also be used as a training manual. Often challenges are faced in cropping the image, editing the text using OCR software. Digitizing a complex document containing text, images, photographs, citations, handwritten information on single page often proves very difficult. When it comes to text recognition of manuscript content using an OCR software, the old-fashioned text, calligraphic words and cursive writing and variations in writing styles often prove as hurdles. Hence the scanned OCR text needs editing by a subject expert before it can be made publicly accessible. For such textual editing of a single page at least thirty minutes are normally required. This point may be kept in mind by the digitization staff.

The digitization staff may be encouraged to key in, wherever possible, information about textual matter and images as data entered manually can be searched more effectively.

Many software vendors are developing digital library software packages to handle and retrieve digital information. Recommendations may be provided in selecting suitable digital library software for acquisition and retrieval of digital information

useful to the researcher community. Since the digital documents are software dependents, software suggested for hosting the content should be user friendly. At every possible stage, help should be provided by giving help messages and instructions. Such digital display software, if employed should enable the users to search the database using Boolean and logical operators by particular author, particular title, particular date or range of records.

7.5.1 Policy on Metadata Creation

The policy document must describe in detail the descriptive, structural, technical, and administrative metadata required to be generated in the digitization process. These descriptors may be changed/modified in accordance with the changing times periodically.

The policy for metadata creation consisting of the elements to be included is also to be specified. Some suggested metadata include Date of creation of the scanned image, Version Number of the software used, Name of the creator, File name, Collection to which the file belongs to, Project number, Description of content, Intended Audience, etc.

The staff working on the digitization projects must be recommended to review systematically the scanned image as well as the metadata to ensure consistency, relevancy and accuracy. This review must ensure that the metadata created adheres to the intended standards. The written policy may also describe what is to be done in respect of images with incomplete details. Evaluation of the usefulness of the metadata being collected is of great importance since image can convey a lot of details to the researcher at first hand, if proper metadata is associated with it. Rules for content creation ensuring quality control in each stage, representation of different types of metadata, synchronizing metadata if stored in more than one location, verifying accuracy of file identifier in image header tags, verifying the correct sequence and completeness of multi-page items, strict adherence to agreed-upon conventions and terminology, etc. are to be formulated and recommended.

7.5.2 Policy on Open Access and Copyrights

Another important aspect of digitization policy is in respect of copyright and

provision of access. The custodian agency must have a clear view in respect of whether the access to the digital content is to be made available openly and freely or whether it is to be restricted or whether it should be a fee based access. Similarly the whether the researcher is obliged to state the source of the MSS in his works and whether copyright of the content rests with the custodian or any other person/agency (if any) needs to be specified. Such a clear web access policy will help the center reach and cater to the target audience in an efficient way.

Owing to the lack of proper understanding of copyright laws of Indian and international laws, often many custodian centers hesitate to host their digital contents on their websites. It may be pointed out that since a manuscript is a document which is at least 75 years old, they are beyond the purview of Copyright laws and hence the custodian centers may be encourage to provide free a open access to their digital content.

The policy document must keep in mind that the main object of the digitization is to provide the digitized content easily accessible worldwide for research scholars. To attain this objective, the digital resources must be provided with least restrictions. The users should be able to download the digitized collections and metadata and should be able to easily aggregate, use, and import into digital research and publication platforms.

7.5.3 Policy on File Naming

The policy document must strictly recommend uniformity in naming the files. The international standard practices are to be adopted for naming the files to enable easy data migration. A standard file naming system such as associating the digital file with the institution and/or with the physical object must be devised according to the institutional policy and must be clearly described in the document. The document must recommend that each digitized object should have a persistent identifier. Another useful suggestion is to use the manuscript name as the folder name in which images are to be sequentially stored. The standard ‘8.3’ file naming format is to be adopted. E.g., 00000001.tif as first image and 00000217.tif as 217^{th} image in a volume sequence. Because of the inconsistencies in the file naming and structural metadata, data migration and importing the catalogues of

other centers often becomes challenging.

Creating and managing a large file containing multiple scanned images is a tedious task because at the time of scanning, every page is saved as a separate file. Hence, naming the files and remembering the content is very difficult. Often, scanning the page is very simple and easy, but linking these pages to form a full manuscript document is a challenging task requiring guidance from a standard manual. Hence it is very important to decide beforehand the file naming policy as well as standards to be adopted in linking various digital elements of a scanned manuscript.

7.5.4 Policy on Data Preservation

The center must evolve a futuristic data preservation policy. What is the medium of storage (CD/DVD/Computer Hard disc/External Hard disc/Cloud, etc.), what is the periodicity of data backup, what are the security features of storage, etc., are to be detailed. The digital content is to be stored in more than one place and ideally one on cloud storage to minimize the chances of unexpected data loss. The data preservation policy must also spell out policy for migrating data to more recent technological platforms and the frequency at which such a necessity is to be evaluated. It is to be remembered that technological obsolescence makes digital materials inaccessible. It could be owing to either degradation of the media on which the digital content are stored such as CDs and Hard disks, obsolescence of software making it impossible to read digital files, or introduction of new computer systems and peripherals that cannot handle older materials. Tapes and disks are all subject to physical decay and none of them has a lifespan that is comparable to that of preservation standard microfilm or acid-free paper.

7.6 Conclusion

The manuscript custodian and conservation centers must be provided with a robustly designed policy framework and reference manual for guiding their day to day activities. Such a policy framework and reference manual will ensure that quality standards are set and the activities carried out in various partner centers are streamlined across the country. Such a manual can be circulated both in printed

and digital form to all the partner centers and help these centers perform better in their task of conservation of heritage content.

References:

Bordin, R. B., & Warner, R. W. (1966). *The Modern Manuscript Library*. Scarecrow Press.

Duckett, K. (1975). *Modern Manuscripts*. American Association for State and Local History.

Gracy II, D. B. (1972). Starting an Archives. *Georgia Archive 1*, *Fall*, 23–24.

Panage, B. M. (2003). *Conservation and preservation of library materials with special reference to digitization of rare materials* [PhD Thesis, Savitribai Phule Pune University]. http://hdl.handle.net/10603/175048

Phillips, F. (1984). Developing collecting policies for manuscript collections. *American Archivist*, *47*, 1.

References and Bibliography

REFERENCES AND BIBLIOGRAPHY

Abid, A. (2011). *MEMORY OF THE WORLD*. Information Society Division UNESCO. www.unesco.org › new › MULTIMEDIA › pdf › mow

About Library. (n.d.). University of Mumbai. Retrieved January 11, 2021, from http://archive.mu.ac.in/service_library.html

About Us. (n.d.-a). Vedshstravidya.Com. Retrieved January 12, 2021, from https://vedshastravidya.com/

About us. (n.d.-b). The Asiatic Society of Mumbai. Retrieved January 12, 2021, from http://asiaticsociety.org.in/index.php/about-us/7-welcome-to-the-official-website-of-the-asiatic-society-of-mumbai

Agarwal, O. P. (1981). Appropriate Indian technology for the conservation of museum collections. In *"Appropriate technologies" in the conservation of cultural property* (p. 134). UNESCO Press. http://164.125.174.23:8080/lee/00_book_%27Appropriate%20technologies%27%20in%20the%20conservation%20of%20cultural%20property.pdf

Agrawal, O. P. (2006). Keynote Address. In A. Sah (Ed.), *Indigenous Methods and Manuscript Preservation*. National Mission for Manuscripts Department of Culture, Ministry of Tourism and Culture, Government of India& D K Printworld (p) Ltd.

Ahmed, F. (2009). Digitization as a Means of Preservation of Manuscripts: Case Study of Osmania University Library. *7th International CALIBER*, 93–97. http://web.inflibnet.ac.in/caliber2009/CaliberPDF/12.pdf

ALCTS. (2009, June 18). *Definitions of Digital Preservation* [Text]. Association for Library Collections & Technical Services (ALCTS). http://www.ala.org/alcts/resources/preserv/2009def

Alexander Kinloch Forbes. (2020). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Alexander_Kinloch_Forbes&oldid=990864847

Alhakoon, C. N. K. (2006). Identification of physical problems of major palm leaf manuscripts collections in Sri Lanka. *Journal of the University Librarians of SriLanka*, *10*. http://www.sljol.info/index.php/JULA/article/view/318/361

Ameen, K., & Shafique, F. (2009). Oriental Collection in the Punjab University Library A Case Study. *Trends in Information Management*, *5*(1). http://ojs.uok.edu.in/ojs/index.php/crdr/article/viewFile/141/129

Anuradha, R. H. (2015). New reflections on curative conservation of manuscripts. *International Journal of Academic Research*, *2*(3/6), 6–14.

Asiatic Society library goes digital with 10,000 books, 2,000 manuscripts. (2018, February 1). *The Indian Express*. https://indianexpress.com/article/cities/mumbai/asiatic-society-library-goes-digital-with-10000-books-2000-manuscripts-5046986/

Bagchi, A. (2010). A Glimpse of Scientific Knowledge in Ancient India: Evidence of Manuscript. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Bakhshi, S. I. (2016). Digitization and Digital Preservation of Cultural Heritage in India with Special Reference to IGNCA, New Delhi. *Asian Journal of Information Science and Technology*, *6*(2), 1–7.

Balakrishna, P. (2011). *Preservation and organization of manuscripts in the libraries of Andhra Pradesh A study* [PhD Thesis, Sri Krishnadevaraya University]. http://hdl.handle.net/10603/65216

Balloffet, N., Hile, J., & Reed, Judith. A. (2005). *Preservation and conservation for libraries and archives* (Judith. A. Reed, Ed.). American Library Association.

Banerjee, S. K. (2010). Manuscript Catalogue and Cataloguing. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Banks, P. N. (1978). Preservation of library materials. In *Encyclopedia of Library and Information Science* (Vol. 23, pp. 180–222). Marcel Dekker Inc.

Baskar, K., & Babu, B. R. (2013). Manuscripts Collection Development in Mahamahopadhyaya Dr. U.V. Swaminatha Iyer Library: A Case Study. *Asian Journal of Information Science and Technology*, *3*(1).

Basu, M. (1950). *Museum method and the process of cleaning and preservation/library preservation*. University of Calcutta.

Basu, R., & Das, K. (2009). *Aspects of Manuscriptology*. The Asiatic Society.

Bennett, J. G. (1965). *Long pilgrimage: The life and teaching of Sri Govindananda Bharati*. Giridharlal Manandhar; /z-wcorg/.

Bharat Itihas Sanshodhak Mandal. (2020). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Bharat_Itihas_Sanshodhak_Mandal&oldid=992232920

Bhate, S. (2018, December 9). Krushnakaathach gnyanpeeth. *Loksatta*. https://www.loksatta.com/lekha-news/article-about-101th-anniversary-of-the-pradnya-pathshala-mandal-1802414/

Bhattacharjee, S. (2017). Storage and Handling of Manuscripts. *International Journal of Humanities and Social Science Invention*, *6*(2), 30–32.

Bisht, A. S. (2003). *Conservation science*. Agam Kala Prakashan.

Biswas, A. (2003). *Bangla Puthir Katha*. Ratnavali.

Biswas, S. C., & Prajapati, M. K. (1998). *Bibliographic survey of Indian manuscript catalogues: Being a union list of manuscript catalogues*. Eastern Book Linkers; /z-wcorg/.

Bordin, R. B., & Warner, R. W. (1966). *The Modern Manuscript Library*. Scarecrow Press.

Boruah, S. (2010). Miniature Paintings of the Assamese Manuscript. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 41–50). National Mission for Manuscripts and Dev Books.

Brunskill, C., & Demb, S. (2012). *Records management for museums and galleries: An Introduction*. Chandos Publishing.

Cartier, G. (1989). Libraries to the Rescue. *UNESCO Courier*.

Chakravarti, S. (1947). A Study on Palm leaf Manuscripts. *The Indian Archives*, *I*(4), 304–312.

Channabasappa, D. B. (2015). Indian Constitutional Provisions towards Conservation of Archaelogical Inheritance. *International Journal of Academic Research*, *2*(3/6), 19–22.

Chapman, P., RAMP (Program), Unesco., General Information Programme., & UNISIST (Program). (1990). *Guidelines on preservation and conservation policies in the archives and libraries heritage*. United Nations Educational, Scientific, and Cultural Organization; /z-wcorg/.

Chatterjee, A., & Maity, A. (2012). A Study on Post Doctoral Researches in Library and Information Science in India. *International Journal of Information Library & Society*, *1*(1), 54–65.

Chatterjee, M. (2010). History of the Catalogue of Sanskrit Manuscripts. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Chavannes. (1905). *Journal Asiatique*, *1*.

Chhatwal, A., Kanwal, P., & Lal, P. (2009). Digital Heritage Archiving in India: A Case Study of Panjab University Library, Chandigarh. *InFuture2009: Digital Resources and Knowledge Sharing*, 145–153. https://infoz.ffzg.hr/infuture/2009/papers/2-10%20Chhatwal,%20Kanwal,%20Lal,%20Digital%20Heritage%20Archiving%20in%20India.pdf

Chopra, Harinder Singh. (1994). *A study of manuscript depository: Guru Nanak Dev University* [(Ph.D thesis).]. Guru Nanak Dev University.

Chopra, H.S., & Narang, A. (2007). Digital preservation of archives and manuscripts: An Indian scenario. *5th International CALIBER*, 8–10. http://ir.inflibnet.ac.in/bitstream/1944/511/1/25-33.pdf

Choukhande, V. G., & Dange, J. (2005). Preservation and Digitisation of Rare Collection of Dr. Panjabrao Deshmukh Smruti Sangrahalaya, Amravati. *3rd International CALIBER*, 648–652. http://ir.inflibnet.ac.in/bitstream/1944/1155/1/76.pdf

Clarkson, C. (1987). Conservation priories; A library conservator's view. In *Conservation of library and Archives materials and the graphic arts*. Butterworth.

Cloonan, M. V. (2012). *Preserving Our Heritage: Perspectives from Antiquity to the Digitial Age*. Neal-Schuman Publishers, Incorporated. https://books.google.co.in/books?id=EwuFtgAACAAJ

Conservation. (1975). *American Council of Learned Societies Newsletter*, *26*, 1–8.

Conservation and Preservation of Rare books and Manuscripts (pp. 1–7). (n.d.). Knowledge Resource Centre University of Mumbai. https://mu.ac.in/wp-content/uploads/2020/01/Knowledge-Resource-Centre-University-of-Mumbai.pdf

Cotton, J., & Sharron, D. (2011). *Engaging students with archival and digital resources*. Chandos Publishing.

Cunha, G. M., & Cunha, D. G. (1971). *Conservation of library materials: A Manual and Bibliography on the Care, Repair, and Restoration of Library Materials*. The Scarecrow Press.

Damle, M., & Pate, N. (2004, January 23). Libraries struggle to preserve books. *The Times of India*.

Das, A. K. (2008). *An evaluative study of some selected libraries in India undergoing the process of digitization* [PhD Thesis, Jadavpur University]. http://hdl.handle.net/10603/19137

Das, U. (2013). *A critical study of preservation techniques for sanchi manuscripts of Assam* [PhD Thesis, Gauhati University]. http://hdl.handle.net/10603/118043

Deshpande, N. J., & Panage, B. M. (2001, March). Digitization of Marathi Manuscripts. *CALIBER 2001*. CALIBER 2001, Pune.

Devi, L. S. (2014). *Conservation and preservation of Manuscripts in Manipur* [PhD Thesis, Manipur University]. http://hdl.handle.net/10603/254457

Dictionary of Archives Terminology. (2017). In *Archives Terminology*. Society of American Archivists. https://www2.archivists.org/glossary/terms/c/conservation

digitization meaning—Google Search. (n.d.). Retrieved December 2, 2020, from https://www.google.co.in/search?%20Source%20=hp&ei=4XsnWsnBF8b38QXii6qwAw&q=digitization+meaning&oq=digiti&gs_l=psy-ab.1.0.35i39k1j0j0i131i67k1j0j0i131k1j0i67k1j0i%20131k1j0i67k1l3.1163.5229.0.6702.10.8.1.0.0.0.221.1422.0j3j4.8.0....0...1c.1.64.psy-ab..1.9.1637.6..0i10k1.206.dygKpDB_nRY

Documentation | INTACH Art and Material Heritage. (n.d.). Retrieved November 26, 2020, from http://heritageici.intach.org/?page_id=535

Downs, R. B. (1957). Collecting Manuscripts: By Libraries. *Library Trends, 5*. https://www.ideals.illinois.edu/bitstream/handle/2142/5705/librarytrendsv5i3f_opt.pdf?sequence=1

Duckett, K. (1975). *Modern Manuscripts*. American Association for State and Local History.

Encyclopedic. (n.d.). *Incaustum, Or Encaustum | Free Online Dictionary of Law Terms and Legal Definitions*. Retrieved November 30, 2020, from https://legaldictionary.lawin.org/incaustum-or-encaustum/

Final Report Summary—CHARISMA (pp. 1–37). (2014). UNIVERSITA DEGLI STUDI DI PERUGIA. https://cordis.europa.eu/project/id/228330/reporting

Fleischhauer, C. (1996, January). *Library of Congress and Ameritech Competition (1996-1999): Resources for Applicants—Steps in Digitization Process (Library of Congress)*. Steps in the Digitization Process. http://lcweb2.loc.gov/ammem/award/docs/stepsdig.html

Gangamma, B., K, M., S., & Singh, A. V. (2012). Restoration of degraded historical document image. *Journal of Emerging Trends in Computing and Information Sciences*, *3*, 5.

Gaur, R. C., & Chakraborty, M. (2009). Preservation and access to Indian manuscripts: A knowledge base of Indian cultural heritage resources for academic libraries. In *ICAL 2009 – Vision and roles of the future academic libraries* (pp. 5-). University of Delhi.

Gaur, R., & Chakraborty, M. (2009). Preservation and Access to Indian Manuscripts: A Knowledge Base of Indian Cultural Heritage Resources for Academic Libraries. *(ICAL-2009)*. International Conference on Academic Libraries, New Delhi.

Ghosh, S., Mahajan, A., & Banerjee, S. (2017). Palm Leaf Manuscript Conservation, the Process of Seasoning with Special Reference to Saraswati Mahal Library, Tamilnadu in India: Some Techniques. *International Journal of Information Movement*, *2*(2), 122–128.

Gracy II, D. B. (1972). Starting an Archives. *Georgia Archive 1*, *Fall*, 23–24.

Graham, T. (2003). Electronic access to and the preservation of heritage materials. *The Electronic Library*, *21*(3). https://doi.org/10.1108/02640470310480461

Gupta, K. K. (2010). Conservation of manuscripts on palm leaves. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 1–10). National Mission for Manuscripts and Dev Books.

Gupta, K. K. (2019, May 13). *Cleaning of Paper Materials* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Harrod, L. M. (2005). Conservation. In R. Prytherch (Ed.), *HARROD'S LIBRARIANS' GLOSSARY AND REFERENCE BOOK* (X, p. 753). Ashgate Publishing.

Harvey, R. (1993). *Preservation in Libraries: Principles, Strategies, and Practices for Librarians*. Bowker-Saur. https://books.google.co.in/books?id=yPzgAAAAMAAJ

Hasan, N., Mohammad, A., & Bedar, S. (2016). Digital Preservation of Rare Books & Manuscripts: A Case Study of Aligarh Muslim University. *International Research: Journal of Library & Information Science*, *6*(4). http://irjlis.com/wp-content/uploads/2017/02/1-IR-379-64.pdf

Hassel, A. (1974). *A History of Libraries* (M. S. Pariohar, Trans.). Hindi Grantha Academy.

Hingorani, K. (2015, August 9). Over 1 lakh rare books, 2,500 manuscripts set to be digitised. *The Hindu*. http://www.thehindu.com/news/cities/mumbai/over-1-lakh-rare-books-2500-manuscripts-set-to-be-digitised/article7519164.ece

IFLA Rare Books and Special Collections. (2014). *Guidelines for Planning the Digitization of Rare Book and Manuscript Collections*. IFLA.

Ing, A. N., Ibrahim, I. B., Samad, S. B. A., Ismailly, N. B., & Sulaiman, S. B. (2011, June 22). Preservation of Sarawak Manuscript. *Proceedings of the Asia-Pacific Conference On Library & Information Education & Practice*. A-LIEP2011, Putrajaya, Malaysia. http://eprints.uitm.edu.my/3559/1/SP_POS11_55.pdf

Ingole, K. R., & Shandilya, V. K. (2011). Image Restoration of Historical Manuscripts. *International Journal of Computer Science & Engineering Technology*, *2*(4), 102–107.

Jain, A. K., Kumar, S., Choudhury, S., Jain, K. B., & Sharma, B. (2013, August 17). Rare handwritten manuscript collection in Indic Languages at Scindia Oriental Research Institute (SORI), (India). *WLIC 2013: Future Libraries Infinite Possibilities*. IFLA WLIC 2013, Singapore.

Jan, R., Islam, S., & Qadri, U. (2012). Rare collection about Kashmir: Survey and documentation. *Brazilian Journal of Information Science: Research Trends*, *6*(1). http://www2.marilia.Unesp.br/revistas/index.php/bjis/index

Jeyaraj, V. (2007). *Care of Archival Materials and Manuscripts: Vol. XII* (2nd ed.). The Special Commissioner and Commissioner of Museums, Government Museum.

Jeyaraj, V. (2010). Storage of manuscripts and conservation guidelines. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 97–102). National Mission for Manuscripts.

Jha, P. (2021, February 7). *Kahi-Suni-Likhi: Vedic and Manuscripts traditions of India and their Contemmporary Relevance*. 3:00-5:00 PM, New Delhi. https://us02web.zoom.us/webinar/88974338999

Jimerson, R. C. (2002). The nature of archives and manuscripts. *OCLC Systems & Services*, *18*(1), 21–23. https://doi.org/10.1108/10650750210424788

Jimerson, R. C. (2003). Deciding what to collect. *OCLC Systems and Services*, *19*(2). https://doi.org/10.1108/10650750310481766

Jones, W. (1786). On The Hindus. In *The Third Anniversary Discourse by the President, at the Asiatick Society of Bengal*. Manuel Cantopher.

Joshi, L. (1970). *Descriptive Catalogue of Sanskrit Manuscripts: Vol. I*. Prajna Pathasala Mandala.

Kanga, M. F., & JamaspAsa, K. M. (1990). CAMA ORIENTAL INSTITUTE. In *Encyclopaedia Iranica: Vol. IV* (7th ed., pp. 722–724). https://iranicaonline.org/articles/cama-oriental-institute-k

Kaplan, E. (2000). We are what we collect, we collect what we are: Archives and the construction of identity. *American Archivist*, *63*, 126–151.

Kathpalia, Y. P. (1973). *Conservation and Restoration of Archive Materials*. UNESCO.

Khan, K. (2013). Oriental manuscripts in Shri Partap Singh (SPS) library Srinagar, Kashmir (India. *Brazilian Journal of Information Science*, *7*, 2.

Khan, N. (2019). *Collection Development Management and Use of Manuscripts in National Library Kolkata Rampur Raza Library Rampur and Maulana Azad Library Aligarh A Study* [PhD Thesis, Aligarh Muslim University]. http://hdl.handle.net/10603/292203

Kharbade, B. V. (2010). Preliminary Report on the Conservation of Kaditas (Black Mmanuscripts). In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 57–64). National Mission for Manuscripts and Dev Books.

Kharbade, B. V., & Agrawal, K. C. (n.d.). Scientific Elucidations of Peacock Feathers Believed to be Used as a Preservative for the Manuscripts. *NRLC Research Papers*, 99–108.

Krishnakumar, M. N. (2010). Manuscript Collections of South India. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Kumar, A. (2014). *A critical study of art manuscripts in Himachal Pradesh* [PhD Thesis, Himachal Pradesh University]. http://hdl.handle.net/10603/128156

Kumar, D. U., Sreekumar, G. V., & Athvankar, U. A. (2009). Traditional writing system in Southern India—Palm leaf manuscripts. *Design Thoughts*, 2–7.

Kumar, S., & Shah, L. (2004). Digital Preservation of Manuscripts: A Case Study. *PLANNER - 2004*, 27–36.

Kundu, A. (2009). *Conservation care and management of manuscripts in museums of West Bengal a micro study* [PhD Thesis, University of Calcutta]. http://hdl.handle.net/10603/154741

Lalitha, J. (2010). Cataloguing of Manuscripts and its Difficulties. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Langwell, W. H. (1957). *The Conservation of Books and Documents*. I. Pitman. https://books.google.co.in/books?id=17UmwwEACAAJ

Lee, S. D. (2001). *Digital Imaging: A Practical handbook*. Library Association.

Li, M., & Niu, J. (2010). A preservation framework for Chinese ancient books. *Journal of Documentation*, *66*(2), 259–278.

Library. (n.d.-a). Ananthacharya Indological Research Institute. Retrieved January 12, 2021, from https://www.ananthacharyainstitute.edu.in/Library.php

Library. (n.d.-b). Tilak Maharashtra Vidyapeeth. Retrieved January 12, 2021, from http://www.tmv.edu.in/library.asp

LIBRARY | University of Mumbai. (n.d.). Retrieved January 11, 2021, from https://mu.ac.in/library

LIBRARY COLLECTION. (n.d.). CHANDMAL TARACHAND BORA COLLEGE. Retrieved January 12, 2021, from https://www.ctboracollege.edu.in/index.php/about/facilities/library-information-centre/library-collection

LoC, T. (n.d.). *PREMIS: Preservation Metadata Maintenance Activity*. Retrieved November 18, 2020, from https://www.loc.gov/standards/premis/

Londhe, N. L., Desale, S. K., & Patil, S. K. (2011a). Development of a digital library of manuscripts: A case study at the University of Pune, India. *Program: Electronic Library and Information Systems*, *45*(2). https://doi.org/10.1108/00330331111129697

Londhe, N. L., Desale, S. K., & Patil, S. K. (2011b). Development of a digital library of manuscripts A case study at the University of Pune, India. *Electronic Library and Information Systems*, *45*(2), 135–148. https://doi.org/DOI 10.1108/00330331111129697

Louise, H. S. I., Ott, D. M., & Fleischhauer, C. (1998). *Library of Congress Manuscript Digitization Demonstration Project Final Report*. https://memory.loc.gov/ammem/pictel/pictel.pdf

Madaani, N. (2013, April 28). 40,000 manuscripts digitized in institutes of Pune. *The Times of India*. http://timesofindia.indiatimes.com/city/pune/40000-manuscripts-digitized-in-institutes-of-Pune/articleshow/19760951.cms

Madhusudan, P. (2017). *Digitization of Manuscripts In Oriental Libraries In South India A Study* [PhD Thesis, Sri Venkateswara University]. http://hdl.handle.net/10603/235054

Mahapatra, G. S. (2008). *Documentation and care of manuscripts in museums in Eastern India Orissa West Bengal Bihar and Jharkhand* [PhD Thesis, University of Calcutta]. http://hdl.handle.net/10603/162316

Maharashtra. (2020). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Maharashtra&oldid=990790643

Mahawar, K. L., & Kuriya, M. K. (2013). Conservation and preservation of manuscripts in the Saulat Public Library, Rampur, Uttar Pradesh. : A survey and proposal for their modernization. *International Journal of Humanities and Social Science Invention*, *2*(3), 4–8.

Mahmood, Z., & Khan, H. R. (2017). Digital Preservation of Rare Manuscripts in Khuda Bakhsh Oriental Public Library, Patna. *PEARL - A Journal of Library and Information Science*, *11*(1). https://doi.org/10.5958/0975-6922.2017.00008.0

Maltesh, N. M. (2010). *Buddhist Manuscripts with special reference to Arunachal Pradesh utilisation restoration and digitisation* [PhD Thesis, Gauhati University]. http://hdl.handle.net/10603/229633

Mamta, M. (2019a, May 13). *Disaster Management* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Mamta, M. (2019b, May 13). *Storage and Handling of Manuscripts* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Manuscript. (1908). In J. A. Murray (Ed.), *The Oxford English Dictionary: Vol. VI part II*.

manuscript meaning—Google Search. (n.d.). Retrieved December 2, 2020, from https://www.google.co.in/search?%20Source%20=hp&ei=4XsnWsnBF8b38QXii6qwAw&q=digitization+meaning&oq=digiti&gs_l=psy-ab.1.0.35i39k1j0j0i131i67k1j0j0i131k1j0i67k1j0i%20131k1j0i67k1l3.1163.5229.0.6702.10.8.1.0.0.0.221.1422.0j3j4.8.0....0...1c.1.64.psy-ab..1.9.1637.6..0i10k1.206.dygKpDB_nRY

Manuscripts. (n.d.). The Asiatic Society of Mumbai. Retrieved January 12, 2021, from http://asiaticsociety.org.in/index.php/holdings/manuscripts

Mazumdar, N. R. (2009). Digital preservation of rare manuscripts in Assam. In *7th International CALIBER-2009: Vol. February 25-27* (pp. 14–19).

Mazumdar, R. N. (2015). *Management of manuscript collection in Assam in digital era a practical approach using ICT tools* [PhD Thesis, Gauhati University]. http://hdl.handle.net/10603/132564

Ming, D. C. (1993). Malay manuscripts: Materials and problems of conservation. *Journal of the Malaysian Branch of the Royal Asiatic Society*, *66*, 2.

Mishra, V. K. (2012). Indigenous method of manuscript conservation. *Global Research Methodology Journal*, *4*. http://www.grmgrlaranya.com/Journals/4th%20issue/INDIGENOUS%20METHOD%20OF%20MANUSCRIPT%20CONSERVATION.pdf

More, T. D. (2015). *Role of oriental libraries in India with special reference to Deccan* [PhD Thesis, Tilak Maharashtra Vidyapeeth]. http://hdl.handle.net/10603/120584

Morley, G. (1962). *A Brief guide to the National Museum*. National Museum; /z-wcorg/.

Morris, J. (1986). Preservation and conservation. In *The Library Disaster Preparedness Handbook*. American Library Association.

Mosher, P. H. (1988). Manuscripts. In *The World Book Encyclopaedia: Vol. XIII*. World Book Inc.

Mukherjee, B. B. (1973). *Preservation of library materials, archives and documents*. The World Press Private Ltd.

Muller, M. (1859). *History of anciant Sanskrit literature*. Williams and Norgate.

Munshi Saraswati Mandir Granthagar. (n.d.). Bharatiya Vidya Bhavan. Retrieved January 12, 2021, from http://www.bhavanslibrary.org/History-Milestones

Nandi, S. G. (2010). Manuscript Use and Manuscript Preservation with Special Reference to Palm-Leave Manuscripts. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Nandi, S. G., & Palit, P. K. (Eds.). (2010). *Manuscript and Manuscriptology in India*.

Narang, A., & Singh, S. (2014). Preservation and Conservation of Manuscripts and Rare Documents in National Archives of India and National Mission for Manuscripts: Problems and prospects. *Information Age*, *9*(2).

Narang, Asha. (2006). *Care and preservation of library documents in universities, archives and colleges of Punjab, Haryana and Chandigarh* [(Ph. D thesis).]. Guru Nanak Dev University.

National Archives of India A Handbook of Information (In Pursuance of Right to Information Act 2005). (2008). National Archives of India.

National Mission for Manuscripts. (n.d.). Retrieved January 10, 2020, from https://namami.gov.in/

National Mission for Manuscripts. (2002). *Vihangama The IGNCA Newsletter*, *IV*(July-Aug). http://ignca.gov.in/national-mission-for-manuscripts/

Nehru, J. (1965). *The Discovery of India*. Asia Publishing House. https://books.google.co.in/books?id=RKsqAAAAYAAJ

Nurdin, A. R. (2012). The manuscript collection of the Aceh museum. *Indonesia and the Malay World*, *40*(116). https://doi.org/10.1080/13639811.2011.649001

Padhi, B. K. (1974). Preservation of Palm Leaf Manuscripts In Orissa. *Conservation of Cultural Property of India*, *VII*, 62–64.

Padmavati, D. B. (2015). Building A Career in Manuscript Conservation—Opportunities and Challenges. *International Journal of Academic Research*, *2*(3/6), 45–48.

Panage, B. M. (2003). *Conservation and preservation of library materials with special reference to digitization of rare materials* [PhD Thesis, Savitribai Phule Pune University]. http://hdl.handle.net/10603/175048

Pande, V. (2019, May 13). *Effect of Light on manuscripts* [Presentation]. One Month Advanced Curative Conservation Training Program, Lucknow.

Pandher, B. K. (2012). User's perception and their feedback about digitization of manuscripts and their use in Punjabi University, Patiala & Panjab University, Chandigarh and VVRI, Hoshiarpur. *International Journal of Information Dissemination and Technology*, *2*(2), 117–123.

Pathak, S. K. (2010). Buddhism and Indo-Tibetan Literature: A Survey Linked to Manuscripts and Xylographs in India. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Pearce-Moses, R. (2005). *A glossary of archival and records terminology by Richard*. Society of American Archivists.

Pedersen, H. P. (1975). Comments on the Barrow Double Method for Deacidification. *International Association of Book and Paper Conservators (IADA)*, 111–115.

Phillips, F. (1984). Developing collecting policies for manuscript collections. *American Archivist*, *47*, 1.

Potter, S., & Holley, R. P. (2010). Rare material in academic libraries. *Collection Building*, *29*(4). https://doi.org/10.1108/01604951011088880

Preserving more Marathi manuscripts and making them accessible—Major project (EAP023). (2017, September 6). Endangered Archives Programme. https://eap.bl.uk/project/EAP248

Principles for the Care and Handling of Library Material: International Preservation. (1998). International Federation of Library Associations.

Qutab, S. (2012). State of manuscripts in Pakistan. *Chinese Librarianship: An International Electronic Journal*. http://www.iclc.us/cliej/cl34saima.pdf

Raghavan, V. (1979). *Preservation of palm leaf and parabaik manuscripts and plan for compilation of a union catalogue of manuscripts: Socialist Republic of the Union of Burma—(Mission)* (pp. 11–13) [(Technical Report).]. UNESCO.

Raja, M. M., & Arora, R. L. (2004). Digitization, preservation & management of rare materials in modern library system. *IASLIC Bulletin*, *49*, 89–92.

Ramana, Y. V. (2005). Digital preservation of Indian manuscripts: An overview. In *3rd International CALIBER 2005* (pp. 370–376). Cochin, Cochin University.

Ramponi, G., Stanco, F., Russo, W. D., Pelusi, S., & Mauro, P. (2005). Digital automated restoration of Manuscripts and antique printed books. *Proceedings of EVA 2005 Electronic Imaging and the Visual Arts*, 764–767. http://iplab.dmi.unict.it/sites/default/files/papers/EVA05.pdf

Rani, S. (2010). Manuscript Collections in Indian Public Libraries. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Rattan, P., & Singh, R. (2014). A study of Government initiatives of digitizing manuscripts in Punjab (India. *International Journal of Multidisciplinary and Current Research*, *2*, 909–914.

Raval, V. (2016). *Heritage preservation in indian cultural modern practice and their possible integration with special reference to manuscripts* [PhD Thesis, Gujarat University]. http://hdl.handle.net/10603/186571

Renganathan, P., & Ashok, R. P. R. (n.d.). *Restoration of traditional heritage for posterity*. http://www.photolam.com/Download/RESTORATION%20OF%20TRADITIONAL%20HERITAGE%20FOR%20POSTERITY.pdf

Research Library. (n.d.). Chhatrapati Shivaji Maharaj Vastu Sangrahalaya. Retrieved January 16, 2021, from https://www.csmvs.in/research/research-library

Robertson, G. (2013). *Disaster planning for libraries: Process and guidelines*. Chandos Publishing.

Roy, N. G. (2010). Anatomy of Manuscripts. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Russo, M. L. (2017). Contemporary librarianship and special collections issues: A case study in manuscript collections of Timbuktu and other Malian cities. *Italian Journal of*

Library, Archives, and Information Science, *8*(1). https://doi.org/10.4403/jlis.it-12136.

Sah, A. (Ed.). (2006). *Indigenous Methods and Manuscript Preservation*. National Mission for Manuscripts Department of Culture, Ministry of Tourism and Culture, Government of India& D K Printworld (p) Ltd.

Sah, S. lal. (2017). *Uttarakhand ki pandulipi parampara ek adhyan prarambh sai 1900 tak* [PhD Thesis, Kumaun University]. http://hdl.handle.net/10603/204680

Sahoo, J., Sahoo, B., Mohanty, B., & Dash, N. K. (2013). Indian Manuscript Heritage and the Role of National Mission for Manuscripts. *Library Philosophy and Practice*. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2384&context=libphilprac

Sahoo, Jyotsana, & Mohanty, B. (2004). Indigenous methods of preserving manuscripts: An overview. *The Orissa Historical Research Journal*, *XLVII*(3), 28–32.

Sarasvathy, P. (2007). *Preservation and conservation of rare materials in select libraries in Karnataka a study* [PhD Thesis, University of Mysore]. http://hdl.handle.net/10603/73608

Sarvakaryeshu Sarvadaa: Saanskrutik Sanchit. (2020, August 22). *Loksatta*. https://www.loksatta.com/vishesh-news/loksatta-sarv-karyeshu-sarvada-article-on-pradnya-pathshala-wai-abn-97-2252247/

Sauer, C. K. (2001). Doing the Best We Can? The Use of Collection Development Policies and Cooperative Collecting Activities at Manuscript Repositories. *The American Archivist*, *64*, 2.

Seifi, L. (2011). Digitization and digital preservation of manuscripts and access in organization of libraries, museums and documents centre of Astan Quds Razavi Library in IRAN: A Case Study. *8th International CALIBER*, 280–284. http://ir.inflibnet.ac.in/bitstream/1944/1618/1/28.pdf

Seifi, Leili. (2011). *Digitization and digital preservation of the heritage collection in select libraries in India and Iran: A comparative study* [PhD Thesis, University of Mysore]. http://hdl.handle.net/10603/17836

Shafi, S. M., & Lone, M. I. (2012). Oriental manuscripts in India: A literature survey. *Library Review*, *61*(8/9), 577–591. https://doi.org/10.1108/00242531211292088

Sharma, A. (2011). *Conservation and digitization of manuscripts in university libraries in India* [PhD Thesis, Panjab University]. http://hdl.handle.net/10603/106921

Sharma, A., & Bala, S. (2010). Traditional Methods of Preserving Manuscripts: An Overview. In S. G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Sheil, A., & Broadhurst, R. (1995). *Library MaterialDigitization Demonstration Project: British Library* (No. 94; Library and Information Research Report). British Library Research and Development Department.

Shukla, P. S. (1980). Preservation of library materials. *Indian Library Movement*, *2*, 73–78.

Siddiqi, I., Cloppet, F., & Vincent, N. (2010). Contour Based Features for the Classification of Ancient Manuscripts. *Pattern Recognition*, *43*(11), 3853–3865.

Simila, K. (2013). CollAsia 2010: Conserving Cultural Heritage Collections in Southeast Asia. *International Preservation News IFLA PAC*, *59–60*, 4–10.

Singh, A. (2012). Digital preservation of cultural heritage resources and manuscripts: An Indian government initiative. *International Federation of Library Associations and Institutions*, *38*(4), 289–296. https://doi.org/10.1177/0340035212463139

Singh, R., Kumar, S., & Agarwal, D. (2010). Preservation, Conservtion and Digitization of Manuscripts: Problems & Prospects. In S.G. Nandi & P. K. Palit (Eds.), *Manuscript and Manuscriptology in India*.

Singh, R., & Parabhoi, L. (2016). Digitization of Monographs, Rare Books at Indian Institute of Advanced Study Shimla: A Case Study. *10th Convention PLANNER, 09-11 November, 2016*, 109–116. http://ir.inflibnet.ac.in/bitstream/1944/2017/1/13.pdf

Singh, S. (2015). *Preservation and Conservation of Manuscripts and Rare Documents in National Archives of India and National Mission for Manuscripts* [PhD Thesis, Guru Nanak Dev University]. http://hdl.handle.net/10603/96470

Slowik, A. J. W. (2009). Collecting medieval manuscripts. *Collection Building*, *28*(3). https://doi.org/10.1108/01604950910971161

Smith, A. (1999). *Why digitise?* Council of Library and Information Resources. http://www.clir.org/pubs/report/pub80-smith/pub8html.

SNDT Women's University Library Annual Report 2012-13. (2013). SNDT Women's University. https://sndt.ac.in/pdf/downloads/annual-reports/12-13/ar-12-13-section13.pdf

Soumoni, D. (2018). *PREVENTION of BIODETERIORATION in TEXTILE and PAPER OBJECTS USING INDIGENOUS METHODS WITH SPECIAL REFERENCE TO*

MUSEUM COLLECTIONS IN TROPICAL CLIMATE [PhD Thesis, Rabindra Bharati University]. http://hdl.handle.net/10603/285539

Stewart, V. R. (1976). A Primer on Manuscript Field Work. *The Midwestern Archivist*, *1*(2), 1–18.

Subbarayappa, B. V. (1989). *A Concise History of Science in India* (D. M. Bose, S. N. Sen, & B. V. Subbarayappa, Eds.). [Published for the National Commission for the Compilation of History of Sciences in India by] Indian National Science Academy. https://books.google.co.in/books?id=WrTaAAAAMAAJ

Suma, D. G. (2015). The Treasures of Knowledge—Manuscript Libraries in India. *International Journal of Academic Research*, *2*(3/6), 49–59.

Suri, J. H. (1947). Palm leaf Manuscripts in Jaisalmir. *The Indian Archives*, *I*(3), 234–235.

Suryawanshi, D. G. (2010). Studies on methods of lamination of birch bark manuscripts. In K. K. Gupta (Ed.), *Rare Support Materials for Manuscripts and their Conservation* (pp. 75–84). National Mission for Manuscripts.

Sutton, S. C. (1967). *A guide to the India Office Library: With a note on the India Office Records*. Her Magesty's Stationary Office.

The Heras Institute. (n.d.). St. Xavier's College Autonomous, Mumbai. Retrieved January 13, 2021, from http://xaviers.edu/main/index.php/the-heras-institute

Thiyam, S. D. (2005). *Manuscripts of Manipur: Study in the modern perspective* [PhD Thesis, Manipur University]. http://hdl.handle.net/10603/41163

Tripathi, D. (Ed.). (n.d.). *Guidelines for the digitization of archival material*. Director, National Mission for Manuscripts.

Tripathi, D. (2013). Preserving the Past for the Future: National Mission for Manuscripts, India. *International Preservation News IFLA PAC, 59–60*, 11–14.

Trochim, W. M. K. (n.d.). *Introduction to Evaluation*. Retrieved December 2, 2020, from https://conjointly.com/kb/introduction-to-evaluation/

UNESCO. (1981). *"Appropriate technologies" in the conservation of cultural property* (Protection of Cultural Heritage, p. 134) [Technical Handbook for Museums and Monuments]. UNESCO Press. http://164.125.174.23:8080/lee/00_book_%27Appropriate%20technologies%27%20in%20the%20conservation%20of%20cultural%20property.pdf

UNESCO. (2017, March 16). *Memory of the World*. Memory of the World. https://en.unesco.org/programme/mow

Veda Shastrottejak Sabha. (n.d.). Sri Sringeri Sharada Peetham. Retrieved January 12, 2021, from https://www.sringeri.net/branches/maharashtra/pune/veda-shastrottejak-sabha

Veena, K. R. (2015). Technical Approaches to Conservation; The Challenges of Digitization of Manuscripts. *International Journal of Academic Research*, *2*(3/6), 78–82.

Ventzas, D., Ntogas, N., & Ventza, M. M. (2012). Digital restoration by denoising and binarization of historical manuscripts images. In D. Ventzas (Ed.), *Advanced image acquisition, processing techniques and applications I* (pp. 73–108). Intech. http://cdn.intechopen.com/pdfs-wm/32189.pdf

Warraich, N. F., & Tahira, M. (2010). Manuscript collection in the Punjab University Library: Assessing management issues. *Chinese Librarianship: An International Electronic Journal*, *29*, 1–13.

Yaqub, M. T., Onibon, O. N., & Olagunju, M. O. (2013). Management and Use of Arabic/Islamic Manuscripts in the Nigerian Universities: A Study of Kenneth Dike Library of University of Ibadan. *International Journal of Humanities and Social Science*, *3*(6), 194–200.

Zhang, A., & Gourley, D. (2008). *Creating Digital Collections: A Practical Guide*. Chandos Publishing.

Appendices

Appendix A: Combined Partner Center Data

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
To carry out research	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
To publicize and propagate history and culture	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
To arouse interest about Indian history, culture and tradition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
To Preserve Manuscript Heritage for posterity	✓	✗	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗	✗
Academic		✓	✓		✓				✓	✓	✓	✓	✓
Society	✓		✓	✓		✓	✓	✓		✓	✓		✓
Archives	✓		✓	✓		✓	✓	✓		✓	✓		
Special Lib.	✓		✓	✓			✓	✓		✓	✓		

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Community						✓				✓	✓		
<25 Yr. Old		✓								✓		✓	
25 -50 yrs.			✓		✓								
51 -75yrs													
76 -100 yrs.							✓	✓	✓				✓
101-125 yrs.	✓										✓		
126 -150 yrs.				✓									
151-175 yrs.						✓							
Year of Estd.	1917	1997	1983	1888	1988	1865	1935	1927	1929	1999	1920	1857	1945
Age of Institute	104	24	38	133	33	156	86	94	92	22	101	164	76
MRC/ MCC Estd. Date	2003	2004	2005	2006	2006	Θ	Θ	2006	2013	Θ	Θ	Θ	2018
Age of MRC/ MCC	18	17	16	15	15	Θ	Θ	15	8	Θ	Θ	Θ	3

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
No. of Working Days in a month	24	22	24	24	22	22	24	24	24	24	24	24	24
No. of working Hrs./Day	8	7.75	5.5	6	7.7	7	6	7	10	3	7	9	7
Reading Room	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
No. of Seats	DNA	80	50	2	100	15	10	25	450	30	DNA	100	110
No of Cubicles	DNA	2	15	0	No	1	1	1	7	0	DNA	35	4
Provision of Digital copies	DNA	✓	No	No	No	✓	No	No	✓	✓	DNA*	No	No
Direct Access to Originals	DNA	No	✓	No	No	No	✓	No	No	✓	DNA	No	No
Avg. No. of Visitors in last 5 Yrs.	DNA	2	170	160	4	25	15	2300	5	3	DNA	6	2
Donation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Donation + Purchase	✓	No	No	No	No	No	No	No	No	No	No	No	No
Own Fund			✓	✓		✓	✓	✓			✓		
Fund from NMM for MRC/MCC	✓	No	No	No	✓	No	No	No	No	No	No	No	✓
Govt. Funds	✓	✓			✓				✓			✓	✓
Donations						✓	✓	✓		✓	✓		
Amount / Annum			600000	200000		850000	600000	900000		450000			750000
Adequacy of funds	✓	✓	No	No	✓	No	No	No	No	No	No	✓	
Regular Funding	✓	No	No	No	✓	No	No	No	No	No	No	No	
Responsible Person Librarian / Asst. Librarian / Proj . Coordinator		✓	✓			✓			✓	✓		✓	

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Conservationist					✓								
Administrator / Trustee	✓			✓			✓	✓			✓		
Total No. Of Staff	11	5	2	2	1	2	4	17	18	2	2	25	
No of Trained personnel	1	0	0	1	1	0	3	2	0	2	0	0	
Periodic training	✓	No	No	No	No	No	No	No	No	✓	No	No	
Training adequate?	✓	No	No	No	No	No	No	No	No	No	No	No	
Total No. of MSS	32000	3000	2800	15788	9163	1700	5000	3050	1451	8000	12000	8870	
Paper	30000	2900	2800	15100	9163	1700	5000	3043	1396	8000	12000	8794	
Birch bark	150	0	0	0	0	0	9	2	0	0	0	0	
Palm leaf	350	0	1	102	0	0	9	5	55	0	0	76	

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Illustrated	0	11	0	120	0	0	62	0	0	0	0	1	
Subjects	26	19	29	34	11	11	14	14	9	8	22	15	
No. of Languages	5	3	2	7	2	5	11	9	1	3	1	5	
No. of Scripts	10	2	4	5	2	4	2	8	1	3	1	5	
Written Collection Development Policy	No	✓	No	No	No	No	No	No	No	No	No	No	
Main Reason for Deterioration of MSS	Aging and Environmental Factors	Aging. Condition is generally good.	Aging	Aging and Environmental factors.	Humidity	Acidity (Brittleness), Environmental Factor	Good Condition, Annual Pest Controlling by PVT. Companies	Insects, Environmental factors	Acidity(Brittleness)	Acidic nature of paper	Aging and Environmental Factor	Condition is reasonably good. Oldness of manuscript, environmental factors.	

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Complete		1777		10000				732		2000	10200		
Incomplete		416		5000				226		6000	1800		
Mobile Compact Storage		2			10								
Steel Almirah	DNA	0	10	20	0	9	31	40	9	50	DNA	8	0
Wooden Almirah	DNA	0	0	0		3	2	0	0		DNA	7	4
Showcase	✓				✓		✓		✓	✓		✓	
Adequacy	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Temperature control	✓	No	No	No	No	No	No	No	No	No	No	✓	No
Humidity control	No	No	No	No	No	No	No	No	No	No	No	No	No
Fumigation chamber	✓	No	No	No	✓	✓	No	No	✓	No	No	✓	✓

Institutes Types		BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Fire Extinguisher		✓	✓	No	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Smoke Alarm		No	No	No	No	No	No	No	No	✓	No	No	No	No
CC TV cams		✓	✓	✓	✓	✓	No	✓	✓	✓	✓	No	✓	✓
Thermometer		✓	No	No	No	No	No	No	✓	✓	No	No	No	No
Hygrometer		No	No	No	No	No	No	No	No	✓	No	No	No	No
pH Strips		✓	No	No	No	No	No	No	No	✓	No	No	No	✓
No.of MSS Preserved till date		1264	0	0	0	9163	0	0	0	1451	0	0	8844	561
Curative		47	0	0	0	0	0	0	0	0	0	0	0	169
Preventive		1217	0	0	0	9163	0	0	0	1451	0	0	8844	392
Condition	Good	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	
	Avg				✓									✓
	Poor						✓							
Traditional Method		✓	No	✓	✓	No	No	✓	No	No	✓	✓	✓	No

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Modern Method	✓	No	✓	No	✓	No	No	✓	✓	No	No	No	✓
Cloth wrapping	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	No
Acid free Boxes	✓	No	No	No	No	No	No	No	No	No	No	✓	✓
Solander Boxes	No	No	No	No	No	No	No	No	No	No	No	No	No
Traditional Methods													
Vekhand Powder	✓	No	✓	✓	No	No	✓	No	No	✓	✓	No	No
Dry Neem Leaves	✓	No	No	No	No	No	No	No	No	No	No	✓	No
Dry Tobbaco Leaves	No	No	No	No	No	No	No	No	No	✓	No	No	No
Black Pepper, Powdered Calamus, Turmeric, etc.	✓	No	No	✓	No	No	No	No	No	No	No	No	No

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Fumigation Chamber	✓	No	✓	No	✓	No	No	No	✓	No	No	No	✓
Naphthalene Balls	No	No	No	No	No	No	No	No	✓	No	No	No	✓
Sprinkling of Pesticides	No	No	No	No	No	No	No	✓	No	No	No	No	No
Chemical Treatment	✓	No	No	No	✓	No	No	✓	No	No	No	No	✓
Accession wise	✓	✓	✓	✓	No	✓	✓	✓	✓	✓	✓	No	No
Collection wise	No	No	No	No	✓	No	No	No	No	No	No	✓	✓
Accessioning	✓	✓	✓	✓	No	No	✓	✓	✓	✓	✓	✓	✓
Classification	No	No	No	No	No	No	No	No	No	No	No	No	No
Cataloguing	✓	✓	✓	✓	✓	✓	✓	✓	✓	No	✓	✓	✓
Book	✓			✓	✓		✓	✓		✓	✓	✓	
Card		✓											

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
OPAC			✓										✓
Printed		✓									✓		
Computerized List		✓				✓							✓
Catalogue published?	✓	No	No	No	✓	✓	✓	✓	✓	No	✓	✓	No
No. of volumes	13	0	0	0	1	5	4	1	1	0	2	2	0
Book published?	✓	No	No	✓	✓	✓	✓	✓	No	✓	✓	No*	No
No. of Books	5	0	0	146	6	41	165	80	0	1	26	0	0
Digitization Done?	*✓	✓	No	✓	No	✓	✓	✓	✓	✓	No	✓	✓
Digitization Year	2004-06	2018-19		2010-12		2009-12	2012	2011-13	2013-15	2017	2017	2018	2017-19
No. of MSS	4000	3000		15000		1200	3000	300000**	1451	8000	12000	100	50
Available on Website / Intranet?	No	✓	No	No	No	No	No	✓	✓	No	No	No	Yes
Constraints and Challenges Locating MSS	**DNA**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Institutes Types	BORI	KKSU	IOS	AS	BBKKRC	SFGS	SVM	IVKRSM	FC	VSVSM	PP	UoM	MJC
Convincing the custodians	**DNA**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Financial Constraints	No	No	✓	✓	No	✓	✓	✓	No	✓	✓	No	✓
Lack of Training	No	✓	✓	✓	No	✓	✓	✓	✓	✓	✓	✓	No
Inadequate Equipment	No	✓	✓	✓	No	✓	✓	✓	✓	✓	✓	✓	No
Lack of Co-ordination	**DNA**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lack of Supervision & Guidance	**DNA**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Definite Future Plans	✓		✓	✓			✓	✓		✓			✓

Appendix B

Image Quality Check List of NMM

This is an indicative quality checklist for ensuring minimum image quality. Some of the assessments will need to be made with direct comparison with the original.

1. Image is correct size/resolution in the long dimension
    a. Digital Master = 3000-5000 pixels (uncompressed)
    b. Clean Master = 3000-5000 pixels (compressed)
    c. Access File = 1024x768 pixels (compressed)
2. File Name is correct (refer naming convention used)
    a. Digital Master
    b. Clean Master
    c. Access File
3. File Format is correct
    a. Digital Master - Tiff (uncompressed)
    b. Clean Master - Tiff (compressed)
    c. Access File – Jpeg/PDF-A (Compressed)

Compare Digital copies with the original for:

4. Image is correct color made (8 bit gray scale etc.)
5. Cropped Correctly
6. Not rotated/flipped
7. Not skewed
8. Lack of sharpness/excessive sharpness
9. No moiré patterns
10. Not Pixilated
11. Not color cast
12. Histogram (Not clipped – No loss of detail in high- lights shadows – 256 shades of gray represented – tonal variation)
13. Over all Too Dark/Too Light
14. Uneven tonal values/flare
15. Excessive noise
16. Remarks

Appendix C
Questionnaire

To
The Administrative Head,

Maharashtra,

Dear Sir,

I am Dr. Vijay Srinath Kanchi, a Ph.D. in Philosophy pursuing my second Ph.D. in Library and Information Science. As part of my Ph.D., I am doing an 'Evaluative Study of Manuscript Conservation and Digital Preservation Efforts by National Mission for Manuscripts (NMM) and Its Partner Centers in Maharashtra'. In this connection I would like to study the Manuscript Conservation and digitization efforts carried out by your center. I am herewith sending a questionnaire which you may kindly fill up and return to me. I shall be greatly obliged for this kind favor of yours. I assure you any data/information collected through this questionnaire will be solely used for my Ph.D. thesis and will not be used for any other purpose or shared with anybody.

Kind regards,

Dr. Vijay Srinath Kanchi
Director,
Knowledge Resource Center,
MooljiJaitha (Autonomous) College, Jalgaon
Mob: 8999827060
Email: vskanchi@gmail.com

INDEX

Sr. No.	Part	Title	Question No.	Pages	Responsible Person's Name & Contact No.
1	A	**General Information**	1 to 14	1 & 2	
2	B	**Collection**	15 to 29	3 to 6	
3	C	**Finance**	30 to 36	7 & 8	
4	D	**Arrangement**	37 to 41	9 & 10	
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Evaluative Study of Manuscript Conservation and Digital Preservation Efforts by National Mission for Manuscripts (NMM) and Its Partner Centers in Maharashtra

Name of the Researcher: **Dr. Vijay Srinath Kanchi**
Director,
Knowledge Resource Center,
MooljiJaitha (Autonomous) College,
Jalgaon
Mob: 8999827060
Email: vskanchi@gmail.com

Research Guide: **Dr. Jagdish N Kulkarni,**
Director, Knowledge Resource Center,
SRTMUN, Nanded

Note: Please fill in this questionnaire and return. The information provided by you will be kept confidential and used for academic purposes only and only general conclusions will be drawn. Individual's identity will be kept confidential, if so desired. Your cooperation will be highly appreciated.
Please answer the questions by tick marking (√) or striking out the unwanted options and give the reasons / statistics wherever required.

PART A
GENERAL INFORMATION

1. Name of the Library/Organization/Institute/Information Center/ Archive:
   _____

2. Nature of your organization:

Academic	Special	Community	Archives	Library
Commercial Company	Government Agency (Please specify State Govt/ Central Govt.	Autonomous Institution	Trust	Society
Religious	Private	Individual	Others (Pl. Specify)	

3. Year of Establishment:
4. Is the center run by a registered trust/society? : Yes/No
5. Name of the Parent Body: .....
6. Please provide detailed history (with origin) of the repository in a separate sheet or please provide any manual/profile or newsletter, containing detailed information.
7. Main objectives of parent institution. (tick whichever is applicable)

   a) To carry out research
   b) To publicize and propagate history and culture
   c) To arouse interest about Indian history, culture and tradition
   d) To Preserve Manuscript Heritage for posterity
   e) Others if any, (please specify)
      i)
      ii)

8. No. of working days of the Center in a week:

9. Does the Center/Institute/Trust/Society have own funds/corpus to run the center and meet its day to day expenses? Yes/No
10. Name of the institutional Head:
    Name of the person responsible for Manuscripts:
11. Contact Details:
    a. Address:
    b. Phone number:
    c. Email id:
    d. Website:
    e. Working hours of the Library /Institution:
12. Is the premises owned or rented?: Owned/Rented

13. Is the center recognized by the National Manuscript Mission (NMM), New Delhi?
    If yes what is the recognitions status?: a. MCC b. MRC c. MCPC d. other (Specify)

14. Since when is the center recognized by NMM? (Date of MoU)

PART B
Collection

15. Total number of manuscripts available:
16. Oldest manuscript is dated:
17. No of manuscripts of different periods:-
    (The period when they were scribed)

S.No.	Period	No. of Manuscripts
1.	Earliest (Before 1300 A.D)	
2.	1301A.D-1600 A.D	
3.	1601.A.D-1900 A.D	
4.	190l.A.D-1947A.D.	
5.	Number of manuscripts of which the dates are not known	

18. Completeness of the manuscripts:

S.No.	Description	No. of Manuscripts
a.	Complete Manuscripts	
b.	Incomplete Manuscripts	

19. Technical Information about Manuscripts

S.No.	Type	No. of Manuscripts
1.	Surface written	
2.	Surface painted	
3.	Surface Inked	
4.	Illustrated/ Illuminated	
5.	Incised/Engraved	
6.	Printed	
7.	Block printed	

20. Please provide number of manuscripts in each content type in your collection.

S.No.	Type	No. of Manuscripts
1.	Book Form	
2.	Manuscript Form (Loose Bundle)	
3.	Scrolls	
4.	Codex	
5.	Illuminated/Illustrated	
6.	Lithographs	
7.	Typewritten	
8.	Handwritten	
9.	Palm Leaf Manuscripts (Tala-Patra)	
10.	EngravingsTamra Patra(Copper Plate)	
11.	Paper Manuscripts	
12.	Birch Bark (Bhoja-Patra)	
13.	Cloth– Cotton and Silk(Pata)	
14.	Leather	
15.	Clay Tablets	
16.	Parchment	
17.	Wooden Boards(Phalaka)	
18.	Hansi-Pata	

21. Nature of the content of the collection

S.No.	Type	No. of Manuscripts
1.	Purana/Itihasa	
2.	Historical	
3.	Philosophical	
4.	Mantra/Tantra	
5.	Vedas/Upanishads	
6.	Other Religious Texts	
7.	Astrology	
8.	Language/Grammar	
9.	Ganitha	
10.	Literature	
11.	Medicine (Ayurveda, Siddha, etc.)	
12.	Music	
13.	Yoga	
14.	Shilpa Shastra	
15.	Any other: Please Specify	

22. Languages of Manuscripts in your collection: Please Specify the numbers

S.No.	Language	No. of Manuscripts
1.	Sanskrit	
2.	Marathi	
3.	Gujarati	
4.	Hindi	
5.	Kannada	
6.	Others Please Specify	

23. Scripts of Manuscripts in your collection: Please Specify

S.No.	Language	No. of Manuscripts
1.	Devanagari	
2.	Modi	
3.	Nandinagari	
4.	Telugu	
5.	Grantha	
6.	Tamil	
7.	Malayalam	
8.	Any other? Pl. specify:	

24. Types of ink used for writing manuscripts:-
    a) Cartoon ink
    b) Iron-gall ink
    c) Not known
25. Does your center have a written collection development policy in identifying the kinds of manuscripts it accepts or it seeks to acquire?
    a) Yes [ ] b) No [ ]
26. If yes, then in which year was your center's written collection development policy adopted _____
27. If no, Please indicate the reasons your center does not have a written policy to identify the kinds of manuscripts it accepts and that it seeks to acquire.

a)	Policy has been drafted but not yet adopted	
b)	Lack of time to prepare policy	
c)	Lack of funds to prepare policy	
d)	Lack of staff to prepare policy	
e)	Do not want to be limited by written policy	
f)	Do not feel written policy is necessary	
g)	Any other (Please specify).....	

28. How the Manuscripts are / were acquired in the Library?

S.No.	Mode of Acquirement	Number
1.	By Purchase	
2.	By Donation	
3.	Transferred from old collection	
4.	Exchange	
5.	By any other mode?	

29. Please mention if any special efforts are being taken for developing your Manuscript collection-

_____

Part C
Finance

30. Does your institute provide annual budget for running the center including funds for acquisition? Yes/No

If yes, details of budgetary provisions in the last five years.

S. No.	Financial Year	Budget	No. of newly acquired manuscripts by purchase	By donation
1.	2015-16			
2.	2016-17			
3.	2017-18			
4.	2018-19			
5.	2019-20			

31. Please provide the details of budgetary grants provided by your center

S. No.	Purpose	Amount
1.	Purchase of Manuscripts	
2.	Conservation/Preservation	
3.	Scanning /Digitization	
4.	Microfilming	
5.	Infrastructure	
6.	Others	

32. Please comment on the budgetary provision

S.No.	Statement	Yes/No
a)	Provision of separate budget for manuscripts	
b)	Do you experience financial limitations affecting the manuscript collection?	
c)	Have you ever applied for external funding	
d)	Any special budgetary grants received by the library for the conservation of its material by the central/ state government or from any other source.	

33. Sources of Finance:

- Government Funds
- N.G.Os
- Private Donors
- Other sources (specify)

34. Name of the Projector Department under which/from whom the funding is received:
35. What is your current financial year budget for your project including staffing?

36. What do you anticipate your budget to be in the next5years?

Part D

Arrangement

Please (√)mark the following options:

37. The manuscript collection is kept in the

i. Separate building ☐ ii. Separate floor ☐

iii. Along with administrative and other sections ☐

38. The manuscripts are kept in

S. No	Manuscripts stored in	Neatly	In disorder	Cloth covers	Wooden covers
1.	Boxes				
2.	Cupboards				
3.	Open shelves				
4.	On floor				
5.	Bamboo Basket				
6.	Wooden Almirah				
7.	Steel Almirah				
8.	Any other(If 'Other' please specify.....)				

39. The manuscripts are kept in the following order:

i.	Size wise	
ii.	Material wise	
iii.	Subject wise	
iv.	Classification wise	
v.	Language wise	
vi.	Acc. No wise	
vii.	Period wise	
viii.	Scheme wise	
ix.	Haphazardly	
x.	Other	(If 'Other', please specify.....)

40. The physical condition of the manuscript collection is

i. Good ☐ ii. Started to deteriorate ☐ iii. Already damaged ☐

41. Physical facilities (Answer Yes or No)

- Adequate reading space { }
- A/C { }
- Non A/c { }
- Ventilation { }

- Furniture for storage adequate/ inadequate { }
- Other if any

Part E
Organization

Technical Treatment of Collection:

42. Is your manuscript collection classified?
    a) Yes [ ]
       i)Fully [ ]
       ii)Partly [ ]
    b) No [ ]
       If yes, which classification scheme have you adopted for classification of the manuscripts? (DDC/ UDC/ CC)

       _____

    c) Please state if any special classification scheme is developed by your Institute-

43. Is your collection of manuscript catalogued?
    a) Yes [ ]
       i)Fully [ ]
       ii)Partly [ ]
    b) No [ ]
       If yes, which Cataloguing Code have you adopted for your manuscripts?

    (ALA/CCC/AACR) _____

44. Have you maintained any tool to know the availability of rare documents in your library Yes / No

45. If yes, which of the tool(s) your library has used to know the availability of rare documents?
    a) Printed catalogue ( )
    b) Card catalogue ( )
    c) Sheet catalogue ( )
    d) Printed Book Form (Ledger Catalogue) index ( )
    e) Computerized catalogue ( )
    f) Any other (please specify) ( )
       i)

       ii)

       iii)

46. Which are the inner forms of catalogue you have maintained in your library to search the availability of required document or information
       a) Author ( )
       b) Title ( )
       c) Alphabetical subject catalogue ( )
       d) Classified subject catalogue ( )
       e) Dictionary catalogue combining author and title catalogue ( )
       f) Dictionary catalogue combining author, title and subject ( )

g) Any other (P lease specify) ( )

i)

ii)

47. Is your manuscript collection accessioned?
    a) Yes
    b) No
48. If accessioned, then please state the columns in the accession register-

a)_____b)_____ c)_____d)_____

e)_____f) _____ g)_____ h)_____

i) _____j)_____k)_____

l)_..... m)..... n).....

o)..... p)..... q)....._____

49. State the title of your printed and published catalogue of Manuscripts, if any.

Part F
Accessibility

50. Do outside users use manuscript library sources and services regularly? Yes / No

    a. If yes, Do you keep any record of it? Mention average number of outside users (both registered and unregistered) per day:
    b. If 'YES', Is it free or fee based? ……

51. Does your manuscript library attract users from foreign countries also? Yes / No

52. If yes, please furnish the following details:

Sl. No.	Type of users	Country(ies)	Type of Institution	No. of days they normally stay
1	Scholars			
2	Teachers			
3	Writers			
4	Students			
5	Translators			
6	Librarians			
7	General Visitors			

8	Other (If any please specify) i) ii) iii)			

53. If your manuscript library facility is provided to Indian/foreign users, state whether charges are made for extending the facility.

Sl. No.	User Type	Amount Charged	State whether per year/ Per visitor otherwise
A	Registered outside Users from India		
B	Unregistered outside Users from India		
C	Registered Indian users		
D	Unregistered Indian users		

54. If there are outside regular users from outstation (including foreign) whether you have any facility for their stay during the period of their stay. Yes/No

55. What is the nature of access to the Manuscript Collection?
- Full and free Open access
- Full and free Open access under direct supervision
- Closed access and retrieval by staff

56. Who all are allowed to refer your Manuscript collection?

_____

57. Do you issue the Manuscripts out of the Center?

Yes / No (with explanation)

- For Staff ( )
- For users ( )

_____

58. Do you feel that the readers handle the records with care? Yes/No (if no then specify)

_____

59. Whether you have taken any special efforts for making people aware of your Manuscript collection?

Yes / No

If yes, then please state the special efforts which you have taken towards this direction.

_____

60. Extension activities (Answer Yes or No) If yes mention the dates.
- Conducting seminars
- Awareness Creation Camps
- Information on website
- Exhibitions
- brochures
- Bulletins/newsletters
- Special lecture
- Others if any:

61. What is the frequency of the visit to manuscript section of the clientele?

Frequency	**Yes/No**
a. Daily	
b. Once a week	
c. Once a month	
d. Once a year	
e. Rarely	

62. Average number of manuscripts users per year in the last five years:

2014-15	2015-16	2016-17	2017-18	2018-19	2019-20

63. Are the manuscripts used fully and regularly?
   a. Yes
   b. No

If No, What are the reasons for the less use or insufficient use of the manuscripts collection?
   c. Not easy to use
   d. Unorganized collection
   e. Lack of infrastructure
   f. Users' unawareness of the collection
   g. Lack of knowledge of language of manuscripts
   h. Inability to understand script
   i. Poor Physical condition of manuscripts
   j. Inadequate knowledge of staff regarding collection

64. How do you rate usage of rare documents by the users?
   a) Very frequently ( )

b) Frequently ( )
c)Moderately ( )
d) Occasionally ( )
e) Rarely ( )
f)Not at all ( )

65. If these documents are being used frequently state whether :
    a) All documents are being used ( )
    b)Major collection of rare documents is being used ( )
    c)Partial collection of rare documents is used ( )
    d)Entire collection of rare documents is not being used ( )

66. If the rare document collection is not being used or being used rarely by the users, please state whether :
    a)These rare documents will be of use to future generation and so need to be preserved.
    b) These rare documents have become obsolete and hence need not be preserved for future.
    c) The collection has some documents which are worthy to be maintained for future generations and hence these are to be preserved.

67. Please describe the services provided to the users of manuscript collection:

Type of Service		
S.No.	**Manual Services**	**Yes/No**
	Reference Service	
	Lending service	
	Bibliographic service	
	Abstracting service	
	Inter-library loan service	
	Transcripts	
	Translation service	
	Consultancy service	
Mechanized Services		
	Audio-Video service	
	Microfilming	
	Microfilm reader	
	Photocopying service	
Computerized Services		
	Automated translating	
	CD-ROM searching	
	Information of new arrivals/new services through email	
	Online full text searching	
	Multi-Media service	

68. Please mention if the center has any future plans to improve and to provide the following services for the better use of manuscript collection:
    (Ex-Existing,SA-StronglyAgree,A-Agree,N-Neutral,D-Disagree,SD-Stronglydisagree)

Digitization of manuscript	Ex /SA/ A/ N/ D/ SD
Electronic document delivery/full text services	Ex /SA/ A/ N/ D/ SD
Access to electronic resources through internet	Ex /SA/ A/ N/ D/ SD
Become a part of national database	Ex /SA/ A/ N/ D/ SD
Will become a part of national and international library network	Ex /SA/ A/ N/ D/ SD
Placing OPAC on the web	Ex /SA/ A/ N/ D/ SD
Transcripts of manuscript in a favored script	Ex /SA/ A/ N/ D/ SD
Translation of manuscripts	Ex /SA/ A/ N/ D/ SD

Part G

Preservation & Conservation Facilities and Equipment

69. What is the condition of main building?
    (a) Very good
    (b) Good
    (c) Needs repair
    (d) Very bad

70. Is your building
    (a) Fully air conditioned
    (b) Partially air conditioned
    (c) Not air conditioned

71. Total number of floors in your building?
    _____

72. Which floor/s house/s the manuscript repository?
    _____ –

73. Does the library have separate reading room facilities for the users of manuscripts collection? (Yes/No)

    If yes, please mention the number of seats available.

No. of Cubicles	No. of Seats in the Reading Room

74. What is the condition of collection room? (Tick the appropriate option)
    (a) Walls: good/cracks/dampness/paint flaking/weak plaster.
    (b) Ceiling: good/cracks/dampness/paint flaking/plaster weak/rain water seepage
    (c) Windows: broken/good
    (d) Floor: good/needs repairs/very bad
    (e) Electric wiring: good/needs repairs
    (f) Ventilation proper/inadequate
    (g) Dust and Air pollution Yes/No
    (h) Regular Housekeeping Yes/No

75. The condition of the place where the manuscripts are stored is:
    (a) Good

(b) Bad
(c) Neither good nor bad

76. Please tick mark whether the center has following facilities or equipments.

S.No.	Facility	Yes/No
1.	Thermometer for temperature	
2.	Hygrometers for measuring Humidity (RH)	
3.	pH Pen/Strips	
4.	Lux Meter	
5.	Fumigation Chamber	
6.	HVAC system	
7.	Photocopier	
8.	Microfilming	
9.	Scanner	
10.	Adequate storage furniture	
11.	Conservation laboratory	
12.	Paper lamination equipment	
13.	Bindery	
14.	Firefighting equipment	
15.	Any other (please specify):	

77. Is the fumigation chamber used regularly for the rare books and manuscripts? Yes/No
    a) The fumigation chamber is new/ old?

    b) Is its use showing good results? Yes/No

    c) Name of the chemical used in fumigation chamber__

Part H

Preservation Procedure and Policies and Maintenance

78. Do you have disaster planning for security against the following: Yes/No
    a. Theft, mutilation, defacing of the Manuscripts { }
    b. Fire, Flood, or any other hazard { }
79. Do you have any written preventive conservation guidelines for Manuscripts? Yes / No
80. Are you following these preservation standards for manuscripts?
    a) International Organization Standardization (ISO)**Space data and information transfer systems — Open archival information system (OAIS) — Reference model**
    (ISO 20652 &ISO 14721:2012),**Long-term preservation of electronic document-based information (**ISO/TR 18492:2005),ISO 15489-1: 2016,ISO/TS 16175-2:2020
    b) American National Standards Institute(ANSI)
    c) The Rare Books and Manuscript Section of American Library Association(RBMS)
    d) PREMIS
    e) The Society of American Archivists(SAA)
    f) The Library of Congress(LC)

g) METS
h) No preservation standard
i) Any other, please specify……

81. Please specify the cleaning methods adopted in the center to clean the manuscript section :
    a) Sweeping Yes/No
    b) Mopping Yes/No
    c) Dusting Yes/No
    d) Washing Yes/No
    e) Any other
82. Please specify the equipments used for cleaning the area where the manuscripts are stored:
    a) Brooms Yes/No
    b) Brushes Yes/No
    c) Vacuum cleaner Yes/No
    d) Automatic floor washing machine Yes/No
    e) Feather duster Yes/No
    f) Any other

83. Please indicate if your library carries out following preventive preservation procedures regularly:

    a) Floor cleaning and shelf cleaning
    b) Collection condition survey
    c) Periodic pest control management
    d) CCTV camera
    e) Manuscripts covered with cloth
    f) In storage containers
    g) Air conditioned storage
    h) Storage in a closed/ secure storage area
    i) Availability and periodic rehearsal of use of fire extinguisher
    j) Others- If any specify

84. Do you feel that the records in your collection are being damaged? Yes/No
85. General condition of manuscripts available in the library
    a) Physical condition of manuscripts: Brittle/good/bad/broken/eaten/
    b) Wear and tear
    c) Soil and surface dirt
    d) Water stains
    e) Yellowing
    f) Deteriorated ink
    g) Evidence of insect infestation
    h) Evidence of poor handling
86. Have you noticed the following in your collection/building? What are the probable reasons for the deterioration of manuscripts in your Library
    i. Insect infestation: Yes/No (Please name them _____)
    ii. Rodents: Yes/No (Please name them _____)
    iii. Dampness: Yes/No
    iv. Presence of dust and dirt Yes/No
    v. Growth of fungus: Yes/No
    vi. Humidity: Yes/No
    vii. Aging of documents Yes/No
    viii. Flaking/fading of ink and paint Yes/No
    ix. Damage (broken edges or liable to break due to rough handling): Yes/No
    x. Foxing spots on MSS Yes/No

xi. Any other (Please specify _____

87. Which preservation techniques are being adopted to curb the damage to your collection?

_____
_____
_____

88. Type of preservation practiced: Herbal /Chemical/Traditional /Others

89. What are the problems faced by your organization in preserving the documents?

a) Financial Problems Yes/No
b) Shortage of Staff Yes/No
c) Shortage of Facilities Yes/No
d) Any other please specify_____

90. Do you agree that the latest chemical techniques are good for preserving and conserving the old records?(If yes give reasons).

_____

_____

91. Do you think that the latest chemical techniques are not appropriate for rare documents?(If yesgive reasons).

_____

_____

_____

_____

92. Which method in your opinion would be the best to check the deterioration of the documents in your collection?

_____

_____

93. What are the future plans of your center for the preservation of old records and manuscripts?

_____

_____

94. Do you feel that there should be networking of all the resource centers? Specify the benefits

_____

_____

95. Which of the following techniques/methods are successful in your opinion:
    (a) Indigenous
    (b) Latest (chemical based)

96. Which of the following preservation techniques are being used by your organization?
    (a) Fumigation Yes/No
    (b) Spraying Yes/No
    (c) Lamination Yes/No
    (d) Microfilming Yes/No
    (e) Digitization Yes/No
    (f) Photocopying Yes/No

97. For protection of manuscripts from dust /dirt / insects / micro-organisms and others (if any) do you practice any of the following?:
    a. Regular cleaning and inspection
    b. Careful handling
    c. Regular dusting
    d. Use of insecticidal paper
    e. Use of insecticides and preservatives such as:
        i. Insect repellants like Neem leaves, cloves, camphor, cedar and citronella oil [ ]
        ii. Naphthalene balls [ ]
        iii. Thymol crystals [ ]
        iv. Para-dicholorobenzene [ ]
        v. Silica gel [ ]
        vi. Habitat Modification [ ]
        vii. Insect Growth Regulators [ ]
        viii. Freezing [ ]
        ix. Any other (please specify).....
        x. Any other (Please specify) _____
    f. Wrapping the manuscripts in red/yellow cloths
    g. Keeping the manuscripts in acid free Solander boxes
    h. Use of fumigation
    i. Any other method

98. Do you take any special efforts to preserve your Manuscript collection?

    Yes / No

    If yes, then which methods do you follow to preserve your Manuscript collection? Please specify

    _____

    _____

99. The preservation techniques adopted by you are reversible/irreversible? (Please tick the appropriate option)

100. Do you have separate Manuscript Conservation Laboratory with trained staff?

    Yes / No

101. Do you have any planning to preserve your manuscript collection with the help of any modern technology?

Yes / No

102. Whether your library carries out the following procedure(s) for the preservation of manuscripts. If yes, please comment on the type and amount of material treated. Please check all appropriate categories:
   a) Re-housing
   b) Basic/simple repair of damaged pages (preservation repairs)
   c) Strict implementation of procedures for proper care and handling of materials
   d) Re-binding Binding of manuscripts
   e) Curative Repair of manuscripts
   f) Others, specify _____

103. Please indicate the method of conservation used

a)	Preventive conservation	[ ]
b)	Curative conservation	[ ]
c)	Both	[ ]
D	None	[ ]

104. The techniques used by your library for preventive conservation of manuscripts

a)	Planning anti-light strategies	[ ]
b)	Strategies for fire detection and control	[ ]
c)	Pest control against biological factors	[ ]
d)	Controlled storage conditions	[ ]
e)	Manuscripts covered with cloth	[ ]
f)	Dusting with soft brush	[ ]
g)	Periodic exposure to natural air under shadow	[ ]
h)	Any other(please specify).....	

105. Protection Methods adopted to face climatic conditions
   a. Air conditioning round the clock/during office hours
   b) Use of humidifiers/dehumidifiers
   c) Use of silicagel crystals/Nikka pellets
   d) Any other method

106. Protection of manuscripts from the effect of light and heat
   a) Using ultra violet absorbing filters at the glass panes
   b) Covering the collection when not used
   c) Reducing the intensity of light using window/door curtains
   d) Use of reflectors instead of direct lighting
   e) Any other method

107. What kind of storage conditions are provided by your library?
   a) Control of heat and temperature [ ]
   b) Control of humidity [ ]
   c) Dust free storage area [ ]
   d) Proper air circulation [ ]
   e) Shelving [ ]
   f) Pollution free stack areas and anti-pollution strategies [ ]

g) Any other(please specify).....

108. Please indicate if your manuscript library carries out the following treatments. If yes, please comment on the amount of material treated and equipment used.

a)	Manuscript cleaning and stain removal	
b)	Oiling (for palm leaf, sanchipat, tulapat)	
c)	Washing& cleaning	
d)	Aqueous de-acidification	
e)	Non-aqueous de-acidification	
f)	Vapor phase de-acidification	
g)	Mass de-acidification	
h)	Fumigation	
i)	Flattening	
j)	Resizing	
k)	Minor repairs	
l)	Filling holes	
m)	Relining	
n)	Encapsulation (full lining)	
o)	Lamination	
p)	Mending	
q)	Repair and restoration	
r)	Any other (please specify).....	

109. Cleaning Techniques adopted by your library

a)	Dry brushing	[ ]
b)	Using small handheld vacuum cleaner	[ ]
c)	Using soft cotton cloth	[ ]
d)	Flat soft brush	[ ]
e)	Any other (please specify).....	

110. Are the manuscripts shelved in proper ventilated area? Yes/No

111. Any suggestion that can bring about betterment in the existing preservation techniques. You could also give any new innovation that your organization has devised/proposes to devise/improvised in preserving documents.

_____

_____

Part I

Management

(About Staff)

112. The manuscript collection is supervised by

i. Librarian ii. Archivist iii. Curator iv. Proprietor v. Other

(If 'Other', please specify it ……)

113. Number of staff:

a. Technical staff: (please fill the separate sheet enclosed)

S.No.	Name of the staff	Designation	Qualification	Experience	Details of Training Received	Nature of duty
1.						
2.						
3.						
4.						
5.						

b. Administrative Staff: Please mention the number: ( )

a. Skilled Staff

114. Do you have trained personnel who are well versed with techniques of conservation?

Yes / No

115. Do you have trained personnel to classify and catalogue the Manuscript collection?

Yes / No

116. Is any of your staff members specifically trained for the digitization? Yes/No

117. Who is the person responsible for the digitization program? .....

118. How many persons are engaged in the program?

Please provide break ups:
Library & Information Professionals: .....
Conservation professionals ……..
Computer and Communication Professionals: .....
Supporting Staff: .....

119. Did your technical staff receive training in preventive/curative conservation? If yes, please provide the particulars:

S.No.	**Name of the Training program and Place where held**	**Duration**	**Name of the participants from your center**

120. Since how long are the present technical staff working in the Center?

S.No.	**Name of the Technical staff**	**Working since**	**Received hands on training (Yes/No)**	**If yes, duration of the training**

121. Do you involve staff members working in other organizations for the project?
Yes/No

122. Are you willing to provide training for your staff in conservation and digitization?
Yes/No

123. Are any of your staff members interested to undergo the training in digitization?

Yes/No

124. Are you providing awareness for your staff trained in conservation and digitization to enhance their capabilities towards modern conservation techniques and updated technological procedures in the aspect of conservation and digitization?
Yes/No

PART J
Digitization

125. Do you have any written policy for scanning/digitization of your manuscripts?
Yes / No

126. Are the following included in the policy/procedure framed for the project?
   a. Selection of Materials
   b. Metadata Creation
   c. Content Creation (scanning, digital capture etc.)
   d. Quality Control
   e. Digital preservation
   f. Copyright
   g. Access
   h. Website Management

127. Have you initiated digitization of the rare documents?
Yes/No
If No, Whether there is any future plan for digitization of the collection?
i. YES ii. NO
If yes, what is the time bound period of the program?

128. If you are planning to get the collection digitized, what is your preparation about:

		Prepared fully	**Initiated preparation**	**Yet to start preparation**
A	Finance			
B	Equipment			
C	Software			
D	Security			
E	Copyright			
F	Trained Manpower			
G	Co-operation from administration			

I	Identification of agency for digitizing			
J	Others if any,			
	i) ii)			

129. Would you like to get all rare documents digitized?:
a)At a time ( )
b)In2 phases ( )
c)In3/multi phases ( )
d)As and when possible ( )

130. If you are planning to get the rare documents digitized in phases, please state the priority wise type of documents you would undertake for digitizing:

Sl. No.	Phase	Type of document(s) (Ex: Manuscripts, Photos, Record books Old printed books)	Approximate no of documents to be digitized	Approximate no of folios to be digitized
1	First Phase			
2	Second Phase			
3	Third Phase			
4	Fourth Phase			

131. If you have already started digitization of your collection, have you undergone a pilot study before initiating the project? Yes/No

132.If you have digitized the manuscripts, have you covered?
a. Content page only Yes/No
b. Full Text Yes/No
c. Both

133.If you have digitized manuscripts, mention:
a. Cut off year
b. No. of manuscripts
c. Name the method used for digitization Keying/Scanning

134.What are the categories of users who will use digitized documents?
……

135. Do you have a research program dealing with digitization? Yes / No
If 'Yes' please provide details separately.

136. Up to what extent digitization work is done?
a) In the beginning stage ( )
b)Lessthan25% ( )
c)26%to 50% ( )
d)51%to 75% ( )
e)Morethan75% ( )

f)Entire rare document collection ( )

137. Furnish the details of documents digitized:

Sl. No.	Type of documents	No. of documents digitized	No. of Documents to be digitized	Cumulative no. of documents
A.	Printed rare books			
B.	Printed rare reports			
C.	Manuscripts			
D.	Typed/printed minutes of correspondence, meetings etc			
E.	Government orders or circulars			
F.	Photographs			
G.	Paintings			
H.	Records of discussion in the assembly etc.,			
I.	Records of speeches			
J.	Others(please specify) i) ii) iii)			

138. Do you have a quality control program? Yes/No

139. If digitization work is completed please furnish the total amount spent on digitization

Rs. _____

140. What is the estimated cost of digitizing documents? (please include staff, equipment, space, energy and other related items)

Per page cost (average).....

Per book/manuscript bundle cost (average).....

Cost of other items (specify) .....

141. How do you estimate the cost of migration/ transfer/ change to modern system? .....

142. What was the source of finance for digitizing rare documents?

a)Parent institution ( )

b)NMM ( )

c) Any central government department other than NMM ( )

d) Ford foundation ( )

f)Carnegie foundation ( )

g) UNESCO ( )

h) Any other (please specify) ( )

143. If the funding is other than parent institution please specify the quantum of finance extended.

Sl. No.	Name of agency	Quantum/Amount(in Rs.L/$)
1		

2		
3		
4		

144. Is the grant received for digitization sufficient? Yes/No

145. If the funds received are insufficient, have you asked for more funds to complete the project Yes/No

146. Whether the entire manuscript collections are available in digitized form?

i. YES ii. NO

If 'YES'

Who started the digitization work?

i. The Organization itself ii. By other external agency.

147. When did the digitization of manuscripts begin?

From the Year……Number (digitized folio) ……

(If 'By the other Organization', please specify……....

……)

148. What is the timescale of the programme?.....

149. If you have digitized the rare documents in your center, please state which of the equipment you have used for digitizing the rare documents?

Sl. No.	Purpose/process	Detailsofequipment		Others
		(Hardware)	(Software)	
A	Document content Scanning			
B	Scanning of photos			
C	Image processing			
D	Storing data/images/information			
E	Retrieval of information			
F	Any other (please specify) i) ii) iii) iv)			

150. Which method did you follow for digitizing your center's documents?

a) By theoffice staffthemselves ( )

b) By the library staff with the help of technical/ qualified staff in your parent institution. ( )

c) By the library staff with the help from outside agency/ agencies ( )

d) By assigning the entire task to private vendor (s) ( )

e) Other mode followed if any (please specify) ( )

i)

ii)

151. Do you think that the digitization of rare material and other documents has helped your center to :

a) Preserve the materials / information for future use Yes / No
b) Provide easy access and encourage users to use more documents Yes/No
c) Enhanced usage of documents Yes / No
d) Reduce maintenance problems Yes / No
e) Reduce space problem Yes / No
f) Popularize use of technology by the users in information handling Yes / No
g) Any other (please specify)
i)
ii)

152. While digitizing the documents, have you taken precautionary measures relating to :
a)Future changes in hardware technology ( )
b) Future changes in software technology ( )
c) Security issues ( )
d) Copyright issues ( )
e) Copying and updating in case of obsolescence of storage device
f) Other problems if any (please specify)
i)
ii)

153. Which software you are using to manage your Manuscripts digital repository of Manuscripts?

_____

154. Did you come across any problems(s) while getting the documents digitized?
Yes / No ( )

If yes, please state whether the problem(s) was/were in relation to:

a) Finance / Inadequate Funding
b) Human resources
c) Expertise and experience
d) Suitable equipment
e) Suitable software
f) ITsupport
g) Data storage
h) Copyright issues
i) Suitable agencies to carry out the work
j) Non- cooperation of the staff
k) Non-cooperation of administration
l) Non-cooperation of the users
m) Self conviction
n) Inadequate knowledge of digitization and related aspects
o) Any other (please specify):
i)
ii)
iii)

155. How many documents do you have in your digital Archives?

S.No.	Type	No. of documents
(a)	Public Records	
(b)	Cartographic Records	
(c)	Departmental Records	
(d)	Private Papers	
(e)	Manuscripts	

(f)	Microfilm Rolls	
(g)	Documents in Digitized form	
(h)	Any other (Please specify)	

156. Whether the catalogue record of the manuscript collections is kept in digitized computerized form?
i. YES ii. NO

157. Whether there is any specific software for keeping the record of the manuscript?
i. YES ii. NO
(If 'YES' please Specify the Software ……...from the year……..)

158. Can the record of the manuscript collection be searched by using this software?
i. YES ii. NO

159. Is the catalogue:
a) Only in paper form
b) Electronic form
c) Only on intranet server
d) Available on the internet or websites

160. Are digitized materials catalogued according to a recognized standard? Yes / No
If 'Yes', which one (mention name)?.....

161. Are the records for digitized documents and the original:
The same
Independent of each other

162. Do you produce any of the following from the documents digitized
a) CD-ROM (how many? .....)
b) Photographs
c) Audio cds
d) Paper documents

163. Which functions are included in the browsing/viewing software
Hyper text links
Highlighting
Others.....

164. What approaches for digitized documents searching are available to users?
a) Author
b) Title
c) Subject
d) Keyword
e) Series
f) Place
g) Publisher
h) Year
i) Free search
j) Boolean search

165. Please give some comments & suggestions in support of your answer

……...……..……..

166. How much staff is working on the program? _____

167. What criteria you use for the selection of manuscripts for digitization

a)	Increase access	
b)	Academic importance	
c)	Reduce damage to collection	
d)	Materials of historical/cultural value	
g)	Preservation	
h)	Save space	
i)	Create a "backup" copy	
j)	Any other (Please specify).....	

168. Do you digitize material from other libraries/ archives/ information centers? Yes / No

If 'Yes', which libraries/institutions?.....

169. Is digitization carried out from?

a)The original [ ]
b)Reproductions [ ]
c)Both [ ]

170. If reproductions are used, what type of reproductions are made use of?

Photographic	
Microfilm	
Slides	
Photocopies	
Microfiche	

171. If a manuscript is digitized, is access still allowed to the original?

a) Yes [ ]
b) No [ ]

172. What are the digital formats that you are currently managing?

Pl Specify_

173. How long do you plan to manage these digitized resources?

a)5years b)10years c)morethan10years

174. Mention the methods followed in your library for duplication of manuscripts

a) Microfilms [ ]
b) Microfiches [ ]
c) Magnetic tapes [ ]
d) Magnetic discs [ ]
e) Digitized photos [ ]
f) CD-ROM [ ]
g) Any other (please specify).....

175. Regarding microfilming of the items being digitized, do you

a. Microfilm in parallel
b. Scan from microfilm
c. Output digital image to on Electron beam film recorder
d. Other(please specify) _____

176. Do you have any publication program for the manuscripts?

Yes/No
If yes, mention the No. of published manuscripts.

177. Materials being Digitized:
(i) Documents:
a) Loose Pages b)Bound Volumes c) Both

(ii)Manuscripts
a) Loose Pages b) Bound Volumes c) Both
(iii) Any other _____

178. Do you digitize any of the following?
a) Engravings
b) Prints
c) Lithographs
d) Posters
e) Postcards
f) Drawings and Water-Colors
g) Three-Dimensional Objects
h) Sculptures
i) Fabrics and Textiles
j) Sound recordings
k) Films and videos
l) Others (specify).....

179. If you digitize sound recordings, what methods are used?.....
....
.....

180. If you digitize film or video, what methods are used?
.....

181. Do you have any specific objectives/goals for digitizing your collection?
Yes/No

182. Have you outsourced personnel for the project? Yes/No
If Yes, Details of the outsourcing agency:

183. How do you organize/conserve manuscripts in microform?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

184. How do you organize/ conserve the digitized/ microfilmed discs?

185. Please enumerate the problems in the organization and management of Manuscripts

Part K

186. **General suggestions about manuscript conservation and digitization**

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Date: _____

SIGNATURE

Appendix D
National Mission for Manuscripts

Manuscript Conservation Center
M.J. College, Jalgaon-425002

Manuscript Charging and Discharging Report
Receipt details

Date:

Accession. No.	Name and Accession Number Manuscript	No. of Folios	Condition	Remarks

Signature of the Authority
On behalf of Deccan College Postgraduate
& Research Institute (Deemed University)

Signature of the Receiver/Conservator
On behalf of MCC MJ College, Jalgaon

Return Details

Date:

Accession. No.	Name and Accession Number Manuscript	No. of Folios	Condition	Remarks

Signature of the Authority
On behalf of Deccan College Postgraduate
& Research Institute (Deemed University)

Signature of the Receiver/Conservator
On behalf of MCC MJ College, Jalgaon

Manuscript Condition Report

Treatement record of Manuscripts
Palm leaf / Birch bark / Paper,Illustrated / Non Illustrated, Loose Folios / bound.

Title Subject

Autor / Writer / Poet | **Volume / Part**

Date Of Receipt From Owner | **Date Of Issue to Conservator**

Total Number Of Illustrations \Maps \ Lithographs / Drawings

Dimensions Cm. (Lxbxh) | **Size of Folios/Pages**
Size of Board Cover

Discription Of The Object :
Author's or Artist Name , Type of Script,- Devnagari / Sanskrit /Pali / Urdu / Arabic / Persian / Hindi. Type of Ink, and Colour, Missing Pages /Folios, Cover The Binding : Paper, Rexene , Synthetic.

Historical Refernce
Provenance
Period

General Condition
Good, Fair, Poor

Condition

1.Brittlenss **2**. Fragile **3.** Discolouration **4.** Fading **5.** Bleeding **6.** Charring Object **7.** Stains **8.** Foxing **9.** Creases **10.** Accereton **11.** Abrasion **12.** Insect **13.** Fungus **14.** Condition of Ink **15.** Condition of Colour **16.** Acidity **17.** Loss of Areas **18.** Presence Of Holes **19.** Edges **20.** Old Repair **21.** Application of Bad Adhesive **22.** Others

Proposed Treatement

1. Fumigation Insectiside/ Fungicide 2. Dry Cleaning 3. Nutralization Aqueous – Non Aqueous 4. Resizing – Aqueous- Solvent 5. Removal of Stains 6. Consolidation 7. Repairing 8. Full Lining with Tissue 9. Strip Lining 10. Guarding 11. Reintegration 12. Special Features 13. Others

Technical Examinations :

Date:

Acidity	Before	After

Solubility Of Ink / Colour
(Soluble, Non Soluble)

Colour Ink Solvent	In Aqueous	Organic

Spot Testing
Solubility of Stain (Specify):
Regaents, Solvents, Consolidations**.**

Water Mark

Microscipic Examination.
Fibre, Pigment, Paint, Ink.

Optical Examination.
Raking Light, Ultra Violet Light, Infra Red, Transmitted Light, Visual Magnification.
Date, Method, Observation

Graphical Documentation :

Graphic Key

Photographic Record Of Negative
Before Treatment
B/W
Colour
Transparency
During Treatment
B/W
Colour
Transparency
After Treatement
B/W
Colour
Transparency

Attachment
More Detail Attached extra Sheet.
Bounded Manuscripts attached treatement record Of Binding

National Mission for Manuscripts

Manuscript Conservation Center

M.J. College, Jalgaon-425002

Treatment Record of Binding

Binding Type Before After
Full Binding, Half Binding, Quarter Binding

Covering Material & Its Colour
Paper, Leater, Rexene,Cloth,Other

Book Make Up
Single Gathering, Multi Gathering, Guarded, Single Leaves, Others

Text Block Edge –
Solid, Sprinkled, Painted, Gilt, Marbled, Other

Description of Title Decoration And Its Colour .
Binded, Printed, Embossed, Painted, Sprinkled, Gold, Calligraphy, Border of the Edges, Other
Title of Spine, Title On Front Board, Title on Front Cover, Other :

Treatment Record Of Stitching Date
Type of Stitching, Restitching details, Paper Stitching, Section Detail

Treatment Record Of Binding Cover Date
Repaired the Orignal, Repaired the Spine, Changed Old Cover, Material & its Colour

Name Of The Material Used

Total Working Hours.

Conserved By: Supervised By :
Signature :
Date

Treatment Record

Actual Conservation Treatment
Date, Description , Method, Observation

Special Requirement s for Handling Transport, Storage etc.
Storage – Encapsulation, Acid Free Solander Box, Cotton Vesthan

Evaluation Of Treatment Results

Chemical and Material Used

Total Working Of Hours: **Date Of Return**

Conserved By : **Supervised By:**
Signature:
Date:

Appendix- E

MANUSCRIPT CONSERVATION CENTER,
M.J.COLLEGE, JALGAON 425002
(MAHARASHTRA)

National Mission for Manuscripts
Manuscript Conservation Center M. J. College, Jalgaon

Name of the Institution/ Collector: M.J. College Jalgaon Religion: Hindu
Full Address with pin code: M.J. College Jalgaon 425002
Ownership: Private: [ ] Govt. [ ] Trust (Institution) [ ]
Head of institution:

Accession No:- Name of manuscript:

No. of manuscripts in bundle:
Name of the owner /Institute: M.J. College Jalgaon
Date of receipt
Type of Manuscript:
[ ] Illustrated [ ] Hand written [ ] Printed [ ] Horizontal format [ ] vertical format
Language: **Script:**
Number of written folio:
Size of the manuscript:
Material used
[ ] Paper Machine-made [ ]Paper handmade [ ]Palm leaf [ ]Birch – bark [ ] Hansi pat
[ ]Parchment [ ] Textile [ ]Other(Please specify)
Condition of Manuscript :
[ ]Dust and dirt [ ]loose folios [ ]Loose Binding [ ]Tear [ ]Stains
[ ]fungus mark [ ]White powder [ ]Ink Stain [ ]Torn [ ]Blood Stain
[ ]Wrinkles [ ]Ink smudged [ ]Acidity [ ]Hole [ ] Water Stain
[ ]Lost areas [ ]faulty Restoration [ ]Powdery deposition [ ]]Fungus Stain
[ ]Insect/ Rodent attack [ ]Abrasion [ ] Old Repairs [ ]Oil Stains
[ ]Charring [ ]Foxing [ ]Brittleness [ ]Rust Stain
[ ]Crease Marks [ ]Charred deep brown edges [ ]Mud Stain

Other observations:

Photo Documentation : [ ] yes [ ]before [ ] Folio No……
[ ] No [ ]After [ ] Folio No……

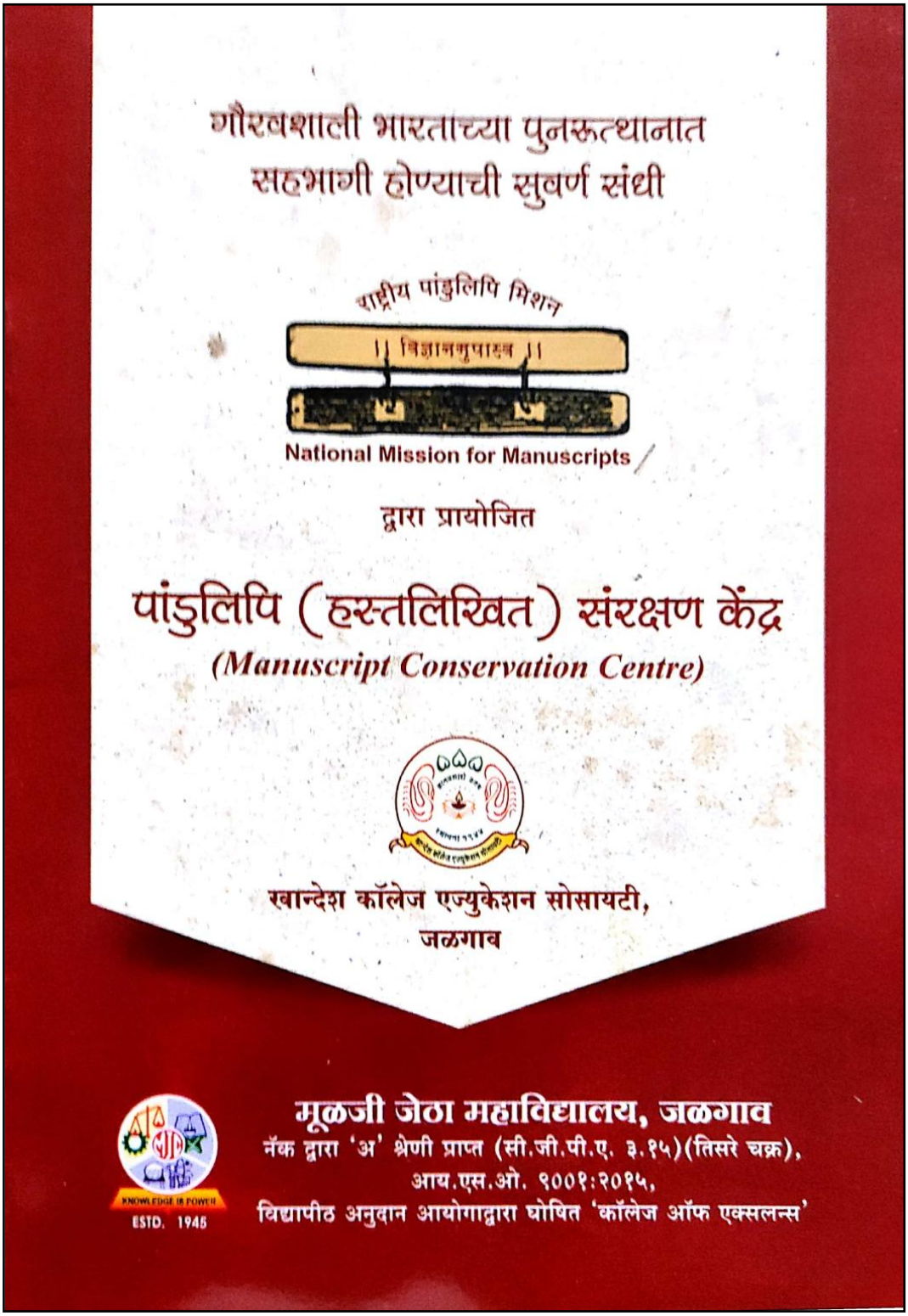
Proposed treatment: **[**] Fumigation Insecticide/ Fungicide [ ] Dry brushing
[ ]Pagination
[ ] Neutralization aqueous/Non aqueous [ ] Removal of Stain [ ] Consolidation
[ ]Full lining
[ ] Strip Lining [ ] Guarding [ ] Reinforcement [ ] Binding

Name of Conservator: - **Date:**

Remarks:-
Margins On Both Sides :-
Colours Used InManuscript :- Red, Black, Green, Yellow, White
Blank Pages No. :-
Tear Pages No:-
Lost Areas Page No:-

Appendix F

Brochure of Manuscript Conservation Center, M J College, Jalgaon



हस्तलिखित म्हणजे काय ?

हस्तलिखित म्हणजे हाताने लिहिलेले ग्रंथ. हस्तलिखित हे कागद, कापड, धातू, विशिष्ट प्रकारची पाने उदा. ताड (Palm) झाडाचे पान इत्यादींवर हाताने लिहिलेले असते. त्यात महत्त्वपूर्ण वैज्ञानिक, ऐतिहासिक किंवा सौंदर्यमूल्य असते. शिलालेख आणि मुद्रित खंडांना हस्तलिखित म्हणता येणार नाही. हस्तलिखिते विविध भाषांमध्ये आणि लिपीमध्ये आढळतात. बऱ्याचदा एक भाषा विविध लिपींमधे लिहिली जाते. उदाहरणार्थ एकाच भाषेचे हस्तलिखित वेगवेगळ्या लिपीमधून लिहिलेले असते. (उदा. संस्कृत, उडीया, तेलुगु, देवनागरी इ.).

हस्तलिखित ग्रंथांच्या संग्रहाला सरस्वती भांडार असे म्हटले जाते. अशी भांडारे विविध मठांमध्ये, राजे-राजवाड्यांच्या संग्रही होती व आजही आहेत. हस्तलिखितांमध्ये धर्म, तत्त्वज्ञान, काव्य, आयुर्वेद, रोगनिदान, मंत्रशास्त्र, नाटक, सापसिडी सारखे खेळ इत्यादी विषयांवरील ग्रंथ अधिक आढळतात.

हस्तलिखिते ऐतिहासिक नोंदीपेक्षा वेगळी आहेत. फर्मान, महसूल रेकॉर्डवरील शिलालेख, जे इतिहासात किंवा प्रसंगी प्रत्यक्ष माहिती देतात, त्यांना हस्तलिखित म्हणता येणार नाही. हस्तलिखितांमध्ये ज्ञान सामग्री असते. शास्त्रीय अर्थाने, 'हस्तलिखित' हा शब्द एखाद्या लेखकाने लिहिलेल्या दस्तऐवजास संदर्भित करतो. जगातल्या प्रत्येक भागात हस्तलिखिते आढळतात ज्यात माणूस त्याचे विचार आणि अनुभव लिखित स्वरुपात देतो. युगानुयुगे माणसांनी साहित्य लिहिण्यासाठी दगड, धातू आणि चर्मपत्रदेखील वापरले असले तरी मुख्यत: वनस्पतीजन्य सामग्रीचा वापर करुन कागदावर किंवा झाडाच्या पानावर लिहिलेल्या हस्तलिखितापुरता आपला संदर्भ मर्यादित आहे. वनस्पती सामग्री म्हणून झाड, झाडाची पाने, झाडाची साल अथवा लिहिण्यासाठी खास तयार केलेले एक पानही असू शकते. ही पाने पातळ पत्रांच्या स्वरुपात, वाळलेल्या वनस्पती साहित्याच्या लगद्यापासून, पारंपारिक पध्दतीने हाताने तयार केलेल्या कागदांच्या स्वरुपात असू शकतात. अधिक अलीकडील उत्पादने पाहता ती आधुनिक कागद कारखान्यांतील पातळ कागदाच्या स्वरुपात असू शकतात. पुरातन काळातील इ.स. पूर्वच्या तिसऱ्या शतकात इजिप्त मध्ये पपाईरस नावाच्या सामग्रीपासून कागद तयार

केल्याचे पुरावे आढळतात. भारतामध्ये ताड(Palm) चे पान किंवा झाडाची साल (भूजपत्र) हे प्रमुख लेखन आधार होते. अकराव्या शतकामध्ये हळूहळू कागदाचा वापर सुरु झाला.

हस्तलिखितांचा संक्षिप्त इतिहास

भारताच्या हस्तलिखितांनी शतकानुशतके जगावर अधिराज्य गाजवले आहे सातव्या शतकाच्या प्रारंभी चिनी प्रवासी ह्युएन त्संगने भारतातील शेकडो हस्तलिखिते आपल्या सोबत नेली. नंतर अठराव्या शतकाच्या उत्तरार्धात, अवधांच्या नवाबाने इंग्लंडचा राजा जॉर्ज तिसरा याला पदशनामाचे एक अप्रतिम हस्तलिखित भेट दिले. आज रॉयल कलेक्शनमधील सर्वोत्कृष्ट हस्तलिखितांपैकी ते एक मानले जाते. जेव्हा इंग्लडमधून ईस्ट इंडिया कंपनी प्रथम भारतात आली तेव्हा त्यांनी या उपमहाद्वीपाला बौध्दिक आणि कलात्मकतेने भरलेले एका महान आणि समृध्द सभ्यतेचा वाहक मानले. भारतीय संस्कृतीच्या विविध पैलूंसह भाषा, तत्त्वज्ञान, कला आणि शिल्पकलेने अनेक कंपनी अधिकाऱ्यांना मोहित केले. याच जिज्ञासेपोटी १८ व्या शतकात 'एशियाटिक सोसायटी ऑफ इंडिया'ची स्थापना विलियम जोन्सने केली. त्यानंतर १९ व्या शतकाच्या सुरुवातीला रॉयल एशियाई जरनलची सुद्धा सुरूवात झाली.

भारतीय सभ्यतेच्या व संस्कृतीच्या विविध पैलूंवर पध्दतशीरपणे अभ्यास करणाऱ्यांमध्ये तसेच अठराव्या आणि एकोणिसाव्या शतकाच्या पूर्वार्धातील पहिला गट स्थापन करणाऱ्या अनेक असामान्य नेत्यांमध्ये, बंगालमधील एशियाटिक सोसायटीचे संस्थापक विलियम जोन्स, तेलुगु भाषेमध्ये महत्त्वपूर्ण योगदान दिलेले पाश्चात्त्य भाषा तज्ज्ञ सी.पी. ब्राऊन, प्रवासी आणि त्यांचे भाषा विद्वान जॉन लेडन, भारताचे प्रथम

सर्व्हेअर जनरल कॉलिन मॅकेन्झी, संस्कृतचे विद्वान चार्ल्स विल्किंस, संस्कृत भाषांतरकार एच.एच. विल्सन आणि बहुआयामी प्राच्य संस्कृती तज्ज्ञ (ओरिएंटलिस्ट) एच.टी कोलब्रुक यांचा समावेश होतो. बहुतांश वैयक्तिक संग्रह भारतातील ग्रंथालये, सरकारी कार्यालये आणि संस्थांमध्ये, तसेच इतर परदेशातील संग्रहालये (उदा. ब्रिटनचे संग्रहालय) इत्यादी ठिकाणी जपून ठेवलेले आहेत.

राष्ट्रीय पांडुलिपि (हस्तलिखीत) मोहीम (मिशन)

भारत सरकारच्या पर्यटन आणि सांस्कृतिक मंत्रालयाने (नॅशनल मिशन फॉर मॅन्युस्क्रिप्टस) ची स्थापना फेब्रुवारी २००३ मध्ये केली आणि या अद्वितीय भव्य प्रकल्पाचा हेतू भारतातील हस्तलिखितरूपी संपत्तीचा शोध लावणे आणि जतन करणे हा आहे. या हस्तलिखितांचे प्रतिबंधात्मक संरक्षण तसेच हस्तलिखितांवरील संरक्षणात्मक उपचार हे महत्त्वाचे ठरतात. त्यासाठी मूलभूत व पायाभूत सुविधा आणि हस्तलिखितांच्या संरक्षणासाठी प्रशिक्षित कर्मचाऱ्यांची एक स्त्रोत बँक तयार करणे आवश्यक आहे. राष्ट्रीय पांडुलिपि (हस्तलिखीत) मिशन (NMM) अशा हस्तलिखित संवर्धन केंद्रांना पाठिंबा देत आहे. विविध संस्था देखील हस्तलिखिते जतन करण्याच्या कार्यात एक संकल्प म्हणून किंवा स्वतंत्ररित्या त्यांच्या संग्रहाची काळजी घेण्यात सहभागी आहेत. शेकडो संग्रहालये, ग्रंथालये, संशोधन संस्था, अभिलेखागार, संरक्षण केंद्र आणि भारताच्या विविध भागातील व्यक्ती भारताच्या हस्तलिखित वारसाचे जतन करत आहेत.

भारताकडे पन्नास लाखांपेक्षा जास्त आणि कदाचित एक करोडच्या आसपास हस्तलिखिते असल्याचा अंदाज आहे. जगातील हा सर्वात मोठा संग्रह आहे. ही हस्तलिखिते देशभरात आणि परदेशातही विखुरलेली आहेत. अनेक संस्थांमध्ये तसेच खाजगी संकलनांमध्ये ती दुर्लक्षित झाली आहेत. म्हणूनच राष्ट्रीय पांडुलिपि

(हस्तलिखीत) मोहीम ही भारतातील भूतकाळाला त्याच्या भविष्याशी जोडण्यासाठी, अशा हस्तलिखितांचे संवर्धन होण्याच्या दृष्टीने त्यांचे संरक्षण करुन उपलब्ध करण्याच्या हेतूने काम करीत आहे.

महाराष्ट्रातील अनेक भागात अशी दुर्मीळ हस्तलिखिते आणि कागदपत्रे विविध ठिकाणी (वैयक्तिक संग्रहाच्या रुपाने किंवा मठ, मंदिरे, मशिद, चर्च, इत्यादि) दुर्लक्षित व जीर्ण होत असल्याचे दिसून येत आहे. सर्व धर्म, पंथ व संप्रदायांचा अशा प्रकारचा जो काही वारसा आहे त्याचे जतन व संरक्षण करणे आवश्यक आहे, ते एकप्रकारे ज्ञानसंपदेचे जतन होय. आधुनिक तंत्रज्ञानाच्या या काळात पुरातन ज्ञानसंपदेचे डिजीटायझेशन करुन भावी पिढीला उपलब्ध करुन देणे ही समाजातील सर्व घटकांची जबाबदारी आहे. यासंदर्भात राष्ट्रीय पांडुलिपि (हस्तलिखीत) मिशन सन २००३ पासून देशाच्या विविध भागात हस्तलिखितांचा शोध घेऊन त्यांचे जतन व संरक्षण करण्याची मोहीम राबवित आहे.

मू. जे. महाविद्यालयाचे पांडुलिपि (हस्तलिखीत) संरक्षण केंद्र/सहाय्यता

खान्देश कॉलेज एज्युकेशन सोसायटी, जळगाव ही गेल्या ७४ वर्षांपासून खान्देशातील एक नामांकित शैक्षणिक संस्था म्हणून परिचित आहे व ती शैक्षणिक संकुलांद्वारे भावी पिढी घडवून देशाच्या विकासासाठी उत्तमरित्या योगदान देत आहे. अशाप्रकारे उत्तम परंपरा असलेल्या या संस्थेने आपली सामाजिक जबाबदारी म्हणून भारताचा इतिहास व संस्कृतीचे जतन करणे व त्याप्रती विद्यार्थ्यांमध्ये आवड निर्माण करण्याचे कार्य हाती घेतलेले आहे. खान्देश कॉलेज एज्युकेशन सोसायटीद्वारा संचालित मूळजी जेठा महाविद्यालयाच्या ग्रंथालयाद्वारा दुर्मीळ हस्तलिखित व कागदपत्रांचे जतन, संवर्धन आणि डिजिटायझेशन करण्याचे कार्य मागील चार वर्षांपासून केले जात आहे.

महाराष्ट्रातील विविध ठिकाणी उपलब्ध असलेली दुर्मीळ हस्तलिखिते आणि कागदपत्रे डिजिटायझेशन करण्यासाठी महाविद्यालयास कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगावतर्फे कुलगुरु सहाय्यतानिधी अंतर्गत २०१६ ते २०१८ या कालावधीमध्ये महाराष्ट्रातील विविध ठिकाणांवरील व्यक्तींकडून, त्यांच्याकडे उपलब्ध असलेले दुर्मीळ पांडुलिपि (हस्तलिखीत) दस्तावेज जतन करण्यासाठी महाविद्यालयाकडे सुपूर्द करण्यात आलेले आहेत. त्यानुसार आतापर्यंत सुमारे ३०० दुर्मीळ हस्तलिखितांचे डिजिटायझेशन करून त्यांना ग्रंथालयाच्या संकेतस्थळावर अपलोड करुन ते सर्वांसाठी उपलब्ध केले आहेत.

महाविद्यालयाचे हे कार्य पाहून महाविद्यालयाच्या ग्रंथालयास 'पांडुलिपि (हस्तलिखीत) संरक्षण केंद्राची' (Manuscript Conservation Center) स्थापना करण्यास २०१८ मध्ये राष्ट्रीय पांडुलिपि (हस्तलिखीत) मिशनद्वारा मंजुरी मिळाली आहे. या प्रकल्पांतर्गत आता मूळजी जेठा महाविद्यालयाने महाराष्ट्रामध्ये विविध ठिकाणी, व्यक्ती आणि संस्थांकडे उपलब्ध असलेल्या हस्तलिखितांना जतन व संरक्षण करण्याची जबाबदारी आपल्या खांद्यावर घेतलेली आहे. भारत सरकारद्वारा चालविण्यात येणाऱ्या ह्या मोहिमेद्वारा आपल्या अमूल्य परंपरांचा किंवा ज्ञानसंपदांचा वारसा पुढील पिढीपर्यंत पोहोचविण्याचे कर्तव्य आपल्या सर्वांवर आहे. मूळजी जेठा महाविद्यालय हे कार्य अत्यंत अभिमानाने पूर्णत्वास नेण्यास इच्छुक आहे. पण, हे कार्य केवळ एक व्यक्ती किंवा संस्थेद्वारा पूर्ण होणे अशक्य असल्याने यात समाजातील सर्वांनी तसेच विविध संस्था, मंदिरे व मठ यांनी स्वेच्छेने सहभाग घेतल्याशिवाय हे कार्य पूर्ण होऊ शकणार नाही.

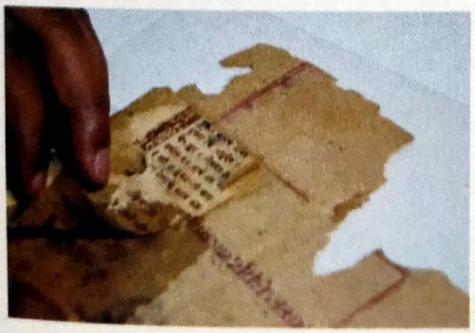
मूळ पांडुलिपिचे (हस्तलिखीत) जतन व संरक्षणासोबतच डिजिटायझेशन केलेले संग्रह महाविद्यालयात सांभाळून ठेवण्याची व्यवस्था योग्यप्रकारे करण्यात आलेली असल्याने कुठलीही व्यक्ती वा संस्था त्यांच्याकडील हस्तलिखिते महाविद्यालयाकडे

हस्तांतरित करू शकते. पांडुलिपि (हस्तलिखीत) संरक्षण केंद्राचा (Manuscript Conservation Center) मुख्य उद्देश हस्तलिखितांना जतन व संरक्षण करुन त्यांचे आयुष्य वाढावे हाच असल्याने, ज्यांना हस्तलिखितांचे हस्तांतरण महाविद्यालयाकडे करावयाची इच्छा नसेल त्यांनी ती फक्त डिजिटायझेशनसाठी काही काळ महाविद्यालयास आपल्या सोयीनुसार उपलब्ध करून दिली तर सदर प्रक्रिया महाविद्यालयामार्फत विनामुल्य करून लगेच हस्तलिखित परत केले जाईल.

डिजिटायझेशन केलल्या हस्तलिखितांची एक डीजीटल प्रत सी.डी./डी.व्ही.डी. स्वरुपात हस्तलिखित धारक व्यक्ती/संस्थांना कृतज्ञता म्हणून पांडुलिपि (हस्तलिखीत) संरक्षण केंद्रामार्फत विनामूल्य देण्यात येऊन त्या हस्तलिखितांचा स्रोत म्हणून त्या संस्था/व्यक्तींचा श्रेयनिर्देश करण्यात येईल.

अत्यंत जीर्ण झालेल्या हस्तलिखितांचे योग्य प्रकारे रासायनिक व इतर प्रक्रिया करुन संरक्षण केल्यास त्यांचे आयुष्य किमान २०० ते ३०० वर्ष वाढते. यामुळे सदर ज्ञानसंपदा भावी पिढीसाठी तसेच संशोधक आणि ऐतिहासिक विषयांची आवड असणाऱ्यांना सहज उपलब्ध होतील.

याप्रकल्पांतर्गत आपणाकडे उपलब्ध असलेली वा आपणांस ज्ञात असलेली हस्तलिखिते, यांचे संरक्षण आणि डिजिटायझेशन करण्यासंदर्भात आपणासोबत काम करण्यास महाविद्यालयातील पांडुलिपि (हस्तलिखीत) संरक्षण केंद्र इच्छुक आहे. एक सामाजिक जबाबदारी समजून आम्ही आपल्याला या संरक्षण व डिजिटायझेशनच्या कार्यात सहभागी करून घेऊ इच्छितो. हस्तलिखितांच्या संरक्षण व डिजिटायझेशनच्या कार्यात आपला सहभाग मिळाल्याने हजारो वर्षाची परंपरा असलेल्या भारतीय संस्कृतीचे



जतन व संरक्षण होऊन या प्रकल्पाचा उद्देश साध्य होईल.

यासंदर्भात आपणास विनंती आहे की, आपल्या वा आपल्या भागातील इतर परिसरात अशी दुर्मीळ हस्तलिखिते उपलब्ध असल्यास त्या बद्दलची माहिती

आपण आमच्या पांडुलिपि संरक्षण केंद्रास कळवावी.

७४ वर्षापेक्षा जास्त प्रगल्भ इतिहास असलेल्या संस्थेमार्फत राबविल्या जाणाऱ्या या विशेष प्रकल्पामध्ये जी हस्तलिखिते (पांडुलिपि) संग्रहित होतील त्यांचा कुठलाही व्यापारात्मक वा इतर कुठल्याही प्रकारचा दुरूपयोग होणार नाही, याची आपण खात्री बाळगावी.

भारत सरकारद्वारा चालविण्यात येणाऱ्या आणि के.सी.ई. सोसायटी संचालित मूळजी जेठा महाविद्यालयात राबविण्यात येणाऱ्या या प्रकल्पात सहभागी होण्यास इच्छुक असलेल्या व्यक्तींनी वा संस्थांनी खालील पत्त्यावर जरूर संपर्क साधावा.

डॉ. विजय श्रीनाथ कंची
प्रकल्प समन्वयक
मूळजी जेठा महाविद्यालय
पांडुलिपि संरक्षण केंद्र, जळगाव-४२५००२
मोबा. ९४०३६७३६१८ / ८९९९८२७०६०
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vskanchi@gmail.com

प्रज्ञावंत नंदकुमार बेंडाळे
अध्यक्ष
के.सी.ई. सोसायटी, प्रशासकीय इमारत,
मू. जे. महाविद्यालय, जळगाव
मोबा. ९८२३१५९६०९
ई-मेलः nandu.bendale@gmail.com

या प्रकल्पाच्या अधिक माहितीसाठी समन्वयकाशी संपर्क साधावा

श्री. सुभाष तळेले
समन्वयक
मूळजी जेठा महाविद्यालय, जळगाव-४२५००२
मोबा. ९८८१०७४३७५ । ई-मेलः tsubhash@kces.in

आपली अमूल्य संस्कृती आणि इतिहास वाचवा -
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